# OF SECONDARY EDUCATION

**A SYMPOSIUM ON COLLEGE ADMISSION REQUIREMENTS**

**Also**

**Articles on Sponsoring Student Activities, Recreational Mathematics, and Guidance**

**VOLUME 28, No. 1** **JANUARY 1953**

**NEXT MONTH—**
**A SYMPOSIUM ON EVALUATION IN MODERN SECONDARY EDUCATION**

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**Next Month**
**A**
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**Education**


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# EDITORIAL

## THE HIGH SCHOOLS AND THE COLLEGES

The high schools are acutely sensitive about their relationships with the colleges and universities which hold great prestige and power in the educational family. Even though the high schools are maligned by employers for poorly preparing young employees for the rigors of business and industrial life and by the elementary schools for being too restrictive and subject-matter centered to provide for the needs of the pupils who come from the lower grades, they appear less concerned about such criticisms than when the colleges question the preparation of high-school pupils for academic work. How the graduates of Midvalley High School fare in the English X examination at the university and the quality of their scholastic record as freshmen at the colleges to which they go, are among the most frequent ways in which the quality of the high-school program is judged.

College admission requirements, the subject of the symposium in the *Journal* this month, have become a focal point of discussion in the broader field of school-college relations. One of the most vocal criticisms leveled at the high school is that while on the whole only a small, though increasing, proportion of its pupils go on to college, a major portion of its attention and resource is directed toward meeting the needs of this minor group. When so criticized for not providing an educational program more suitable to the needs of all of its students, the argument most frequently advanced by the high schools is the restrictive demand of the admission requirements of the colleges and universities. The problem is accentuated by the fact that a single high school, however small, must provide a curriculum sufficiently broad to enable each graduate who plans to attend college to satisfy the course requirements for admission to any one of a variety of higher institutions. Requirements for admission and the ensuing academic standards vary so greatly from institution to institution that the high school is confronted with a bewildering complexity. The smaller the high school, the more difficult the task. And it must be remembered that the small is still the typical high school.

Can the purposes and views of the colleges and the high schools be so divergent as their discussions at times suggest? Are they not both interested in the best possible education for each student? What are the sources of the difficulties in their relationships?

Part of the problem is the perennial one that characterizes the relationships between any two educational units and stems from the nature of the hierarchy between them. Each lower school is a *preparatory* school for the next higher one. The chief interest of the higher school in the lower one is in this preparatory function. While the lower school is also interested in its preparatory function, its major concern is with what it can do for all of its students at the time. It is an unfortunate but tenacious practice for the higher to blame the lower school for what it considers to be glaring inadequacies in the preparation of entering pupils. This protective reaction is an easy psychological habit to fall into. "What can you expect from us," the middle school asks, "when we receive such poorly prepared students from the lower school?" It is unlikely that this tendency will ever disappear entirely, although its shrinkage may be anticipated as educators as-

sume increased scientific and professional objectivity in their work. There is already a noticeable shift in the attitude of the high school toward the elementary school. Recognizing the facts of individual differences, the high-school educator not only accepts, but expects pupils from elementary schools to vary in their capacities and attainment; he is willing to begin with them where they are and take them as far as possible in the allotted time. This attitude is beginning to be expressed toward high schools by junior colleges and to a limited extent by the state colleges. It may be expected that it will slowly permeate all educational levels.

Another source of difficulty in the relations between the high schools and the colleges clusters around the practice of the higher institutions to require a prescribed set of courses for admission. Whether or not with intent, this practice places the college in a position of powerful control over the curriculum of the high school. It is responsible for the cry of "dictation" by the secondary educator. Throughout the nation there is a marked trend away from requiring a set pattern of courses for admission to college. This is the result of the weight of a considerable body of research data which has failed to establish the superiority of any particular course pattern as preparation for successful college work and the insistent demand of the high schools that, knowing best their own pupils and situations, they should be freed from the external authority of the higher institutions. It is too early to determine whether or not this shift from course requirements will bring any fundamental change in the secondary school because it has been under way such a short time, and has not even been felt appreciably in some parts of the country. On the one hand are those who claim that the high schools neither use the freedom which they now have nor want more, but rather are pleased to have such an honorable and impenetrable defense for their lethargy. Others are of the opinion that specific course requirements for college admission constitute one of the greatest single blocks to the improvement of secondary education and that without their removal no fundamental progress can be made. In this regard the action of the University of California on December 6, 1952, as reported by Dr. Spindt on page 34, of this issue of the *Journal*, is of particular interest.

Since the colleges and universities include older, more mature students than the high schools, select intellectually superior students, and have responsibility for the production of intellectually disciplined practitioners in the various professions, they appropriately take a more intellectual approach to education than either the elementary or the high schools. This partly explains the direction of their influence upon the high schools, for they reason that the best preparation for college will be under circumstances that are as nearly like those in college as possible. This means preoccupation with things intellectual in a curriculum that in content, organization, and presentation closely parallels that of the higher institution. Accordingly the colleges are inclined to be alarmed over such dominant trends in the curriculum of the modern high school as the increased emphasis upon the fine arts, crafts, and "practical" subjects, at the seeming expense, for example, of foreign language. Mathematics, physics, English composition, and Latin are considered to be much more appropriate college-preparatory subjects than, for example, typewriting, music, speech, and physical education, and consequently deserving of a favored place in the school program. That grades in some subjects correlate more highly with college success than do grades in other subjects should not lead to the assumption of a necessarily causal relationship. Moreover, the making of a whole man, whose

intellectual, emotional, and physical components are developed harmoniously, is the objective of a truly liberal or general education, which is the concern of both the high school and the college. In this view, it may be that the colleges themselves have been too one-sided in their programs and should perhaps be less disposed to make over the high schools in their own image. A better relationship would undoubtedly exist between the colleges and the high schools if the former would recognize that the pupils in the lower school are different from those in the college in their maturity, needs, and purposes, and that therefore the program, even for the college bound student, may need to be of a different character from that offered by the colleges.

A distinction should be made between the problem arising at the transition from elementary to secondary school and that appearing at the end of secondary education where the situation is more emotionally laden. In the first instance, practically all of the students are required by law to continue in school, and the secondary institution is required by law to accept from the lower school all but a few who are clearly unfit. More vigorous, albeit hidden, selective processes begin to operate even before the end of secondary school and become openly recognized and competitive by the beginning of college. Those who are to attend institutions of higher learning must be selected. Since this is a critical decision both from the standpoint of the individual and of society every effort should be directed toward improving selection procedures. We have increasingly made clear our national decision that the selection of students for college shall not be on the basis of birthplace, economic circumstance, race, sex, or creed. Higher education, in one form or another, the citizens of the United States have decided, should be available to all who want and are able to profit from it. This new experiment in the world reflects our pioneering tradition and our abiding democratic faith in the power and value of education. This decision, however, imposes upon us heavy responsibilities in determining the most perceptive means rather than clinging to the most *traditional* methods of selecting those who are most able to profit from the opportunities of a higher education.

In selecting students for admission to college, multiple, rather than single, criteria are proving to be the more useful. A combination of over-all grade average in high school, the results of tested achievement and scholastic aptitude, and the recommendation of school officials who know the pupil well, has yielded the highest results. Rewarding new ventures in predicting college success may be forthcoming by experimenting with tests of performance in simulated life situations, and devising creative methods for assessing the strength and direction of the motivating forces of adolescents.

Unprecedented increases in enrollment during the next decades face both the high schools and the colleges in California. This requires that each critically analyze its problems and plan constructively for the future. In so doing, the relationship between the systems of secondary and higher education must be considered, for new patterns will certainly be required as the two expand to include new groups and interests. The symposium in the *Journal* this month has been designed to assist in the discussion of the one phase of this problem which is of such vital concern to secondary educators and, we believe, also to the higher institutions. Stressed throughout is the necessity for all of the high schools and all of the collegiate institutions to become better acquainted and to work more closely together.

Do the high schools have the freedom they wish in shaping their educa-

tional program? Do they use the freedom they now have? Do the colleges allow the high schools as much freedom as is consistent with the highest type of preparation and bases for selection? While the answers to these questions are probably negative, there is evidence of substantial progress toward greater freedom and mutual respect between the colleges and the high schools. They both have important opportunities and responsibilities as they face the future.

The *higher institutions* have two important avenues through which they may work. One is in the direction of encouraging the high school to fashion a program of its own design rather than a replica in content or method of the college. The other is in the participation of all departments in the university in preparing the best possible teachers for the great demand that is imminent. The directing influence of the leadership of the colleges and universities upon the high schools in the next decade cannot be underestimated.

The *high schools* can continue to examine themselves and to build a strong functional program for all of their students, strengthening their guidance programs so that *each* student receives the type of preparation that will best fit him for the road ahead. Rather than ascribe present inadequacies to domination from the outside, they might well take courage from the achievements of the past and become even more constructive in meeting the challenges of the next decades.

R. N. B.

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## NATIONAL TEACHER EXAMINATIONS WILL BE HELD ON FEBRUARY 14, 1953

The National Teacher Examinations, prepared and administered annually by Educational Testing Service, will be given at 200 testing centers throughout the United States on Saturday, February 14, 1953.

At the one-day testing session a candidate may take the Common Examinations, which include tests in Professional Information, General Culture, English Expression, and Non-verbal Reasoning; and one or two of eight Optional Examinations designed to demonstrate mastery of subject matter to be taught. The college which a candidate is attending, or the school system in which he is seeking employment, will advise him whether he should take the National Teacher Examinations and which of the Optional Examinations to select.

Application forms and a *Bulletin of Information* describing registration procedure and containing sample test questions may be obtained from college officials, school superintendents, or directly from the National Teacher Examinations, Educational Testing Service, P.O. Box 592, Princeton, New Jersey. Completed applications, accompanied by proper examination fees, will be accepted by the ETS office during November, December, and in January so long as they are received before January 16, 1953.

# Set the High Schools Free

By WILFORD M. AIKIN

**• The central problem in high-school-college relations as viewed by Wilford Aikin is the prescription by the colleges and universities of a set pattern of courses for admission. He suggests that the high schools and colleges ought to trust each other more completely and work together more closely in overcoming the barriers between them.**

**Dr. Aikin brings a rich experience to bear on this problem. He was for many years a secondary-school teacher and administrator, and also a professor of secondary education at Ohio State University. He served as Chairman of the Commission on the Relation of School and College and is author of the widely read volume, *The Story of the Eight Year Study*. As Chairman of the Commission he was responsible for the most comprehensive study that has yet been made of the effect of subject patterns on college success. Dr. Aikin, who now resides at 1350 Channing, Palo Alto, California, is devoting his time to professional writing and educational and personnel consultation work.**

Why not solve this old, irritating problem of college admission and be done with it? It seems to me that the steps to be taken are neither too many nor too difficult.

First, the college must trust the high school. The college should say to the high school: "It is your responsibility to provide the best possible guidance and educational experience for each of your students. It is up to you to do this for each student whether or not he is going to college. The college will help you in every way it can, but it won't tell you what or how you should teach. You have a great and difficult task in providing for the needs of *all* your students. The college will no longer handicap you by prescribing subjects and courses for the students coming to college."

The college can well afford to place its confidence in the high school.

The high-school principals, counselors, and teachers are graduates of the colleges. They succeeded in college. They know from their own experience what college is and what it takes to make good as a college student. They are getting college-bound students ready to travel a road which they have already trod successfully themselves. Why not leave the responsibility to them? That is where it belongs.

The college can safely trust the high school to decide what pattern of subjects and courses is best for each student. The high school knows the student and his parents; the college does not.

The assumption that success in the liberal arts college depends upon the study of certain prescribed subjects in high school is no longer tenable. There is little evidence to support that assumption. There is overwhelming evidence against it.[1] Clearly success in college depends upon something else.

What are the foundations for a successful college career? The late Herbert E. Hawkes, distinguished Dean of Columbia College, Columbia University, suggested the answer in the following report:

> A few weeks ago I called a conference of all the instructors of freshmen in Columbia College in order to talk about this important topic. In the course of the conference I asked them what kind of students they really wanted in their courses, what kind of intellectual background, what pattern of preparation, what areas of competency. The replies were interesting. They reported with one accord that they wanted boys who could read with good speed and

[1] *Adventure in American Education*. Harper & Brothers, 1942. See especially Volume IV of this five-volume report of the Commission on the Relation of School and College. Volume IV is entitled *Did They Succeed in College?*

comprehension, and who knew how to gauge their reading to the various types of material that they were called upon to master. They wanted boys who had a reasonable facility in self-expression, both orally and in writing. So much for English. Then they wanted boys who knew how to tackle a hard intellectual job and carry it through to completion—a boy who had acquired the habit and zest for work. You may call this discipline. Furthermore they wanted boys who knew an idea when they saw one, who were accustomed to dealing with ideas, in short, who had reasonable intellectual maturity.

These three points were mentioned again and again in one form and another. The amazing fact was that very little was said about the specific pattern of subject-matter preparation. If the students had gained these fundamental qualities and attitudes they did not care where they got them. In fact, many of the instructors in the various freshman courses in social studies, in humanities, and even in science said that they could not tell from the way in which a boy took hold of his college work whether he had passed this or that entrance examination except insofar as it was reflected in these qualities. To be sure, in the humanities it appeared that the boy who had good grounding in Latin had a head start in the reading of the Greek and Roman classics that are included in this course. But in this course, those who had received such training could not be distinguished from those who had not after a few weeks, provided they knew how to work. The corresponding fact held true in the sciences.

Here is a college faculty declaring that success in college depends upon skill in the use of the mother tongue, readiness and ability to work hard, and "reasonable intellectual maturity."

Other qualities, such as emotional stability, might be added to those listed by the Columbia College faculty. However, the important point is that success in college depends chiefly upon the student's qualities of mind and character plus genuine intellectual purpose.

It follows that it is the responsibility of the high school to develop these characteristics in college-bound students. Surely no one will claim that they can be developed only by means of a certain pattern of college prescribed subjects. Such a claim just does not make sense.

The second step toward the solution of the perennial problem of college admission must be taken by the high school. If the college is to trust the high school, the high school must prove itself worthy of the trust. If the college is not to prescribe for the student, the high school must guide him wisely and teach him well.

To do this, the high school must know each student intimately and his parents, too. Wise planning involves the student, his parents, and the high-school counselor with contributions from the teachers.

To know each student well, the high school must observe him closely in the classroom, on the playing field, in various groups and school activities. Knowledge obtained in these ways should be supplemented by parental observations at home and in non-school activities.

Appropriate tests should be used to add to the high school's knowledge and understanding of the student. By the use of standardized tests the school obtains measures of the student's abilities and interests. But test results should never stand alone. They are only one kind of evidence of the student's interests, abilities, achievement, and needs. All information concerning the student, whatever its source, should be brought together, carefully weighed and used in the guidance of the student at each step of his high-school career.

Guidance is not an incidental responsibility. Nor is it a task of the counselors alone. It requires the combined judgment and wisdom of every teacher and administrator who works with the student. Parents should share and the student's purpose must be enlisted in his own education. Together, the representatives of the school, the student and his parents must decide what is best for the student at each stage of his progress.

Every subject taught in the school should be open to each student. No subject, no field of study, no educational experience available in the school should be denied the student if that is what he needs. For this reason I doubt

the wisdom of dividing the high-school curriculum into fixed college preparatory, general, business, and vocational courses.

To measure up to its responsibility to the community as well as to the college, the high school must teach well whatever subjects it offers. Inherent in every subject of study are many important values. In attempting to bring out for the student the whole range of values, the high school often fails to develop the basic skills without which all the other values are unattainable.

Take the subject of English, for example. It is rich in values for the high-school student. It can yield delight in reading, appreciation of great literature, understanding of life and people. It can yield deep satisfaction and skill in speaking and writing. But none of these values is within the reach of the student who cannot read a page of simple prose with comprehension or express an idea simply and clearly in speech or writing.

Therefore, English is not taught well in high school unless every student is taught the basic, elementary skills of reading and writing, no matter how much time and effort it takes. The necessity of "bonehead" English courses at the college level is inexcusable.

The chief responsibility for good teaching rests upon the high-school principal. That is his first order of business. Usually he makes it his last concern. He is too busy running the show to see to it that the performance is excellent. He must make the supervision and development of his teachers the heart of his job.

With competent guidance and good teaching well established, the high school can say to the college, "Trust us to do our work well. Let us decide what the high-school curriculum should be. Let us do what we think best for each student. Counsel us, but don't tell us what we *must* do. Don't shut us in."

The high school will never be what it should be until it is set free. It is too easy for the high school to dodge its responsibility to its students and its community. It is easy to hide behind college prescriptions and stand still.

But the American high school cannot stand still. It must change and change fundamentally. "Units" and "credits" must go out the window. Concern for the accumulation of credits—the husks and molds of education—must give way to concern for the continuous growth and development of young people. Instead of being a place to which young people go because they have to, school must become a place to which they go eagerly to achieve worthy purposes that have meaning for them.

The growth that must come in American secondary education will come only when every high-school principal and faculty take a fresh look at the boys and girls of the community and ask themselves, "What should the school be doing to help them meet their needs?" Then they must take a fresh, objective look at the school. Then, hardest of all, they must change the school so that it serves all its students better.

The third step in the solution of the problem of college admission requires the high school to give the college the information it needs to select its students.

The college wants only the students who are likely to succeed. It should have whatever information it needs to select intelligently. The high school that knows its students as it should can furnish all needed information about any student.

Evidence from such sources as the following would provide ample data:

1. Descriptions of students, indicating qualities of character, habits of work, personality, and social adjustment.

2. The results of the use of instruments of evaluation

*a*) Such standardized tests as are applicable to the school's work

*b*) Other types of tests appropriate to the objectives of the school

*c*) Scholastic aptitude tests that measure characteristics essential to college work and are independent of particular patterns of subjects.

3. A complete report of all subjects studied in high school by the student and of the quality of his work in each.

4. An objective analysis of the student and his work by the high-school principal.

An admission plan such as this would not fix the content or organization of the high-school curriculum. It would enable the college to select its students wisely and it would free and challenge the high school to grow into the fullness of its stature.

One word more. Why don't college and high-school teachers become acquainted? They might even become friends!

Some of my most gratifying and heart-warming experiences as Chairman of the Commission on the Relation of School and College came when small groups of school and college teachers sat around the table to talk with each other informally.

High-school teachers of mathematics met man to man with teachers of mathematics from colleges to which they were sending many students each year. In the same way, English, history, science, art, music, home economics teachers came together. These were not conventions, not even formal conferences. They were friendly talks about common interests.

How they were enjoyed by everyone! The results were mutual respect, better understanding of each other's problems, closer co-operation. However, it was not easy to get college teachers away from the campus. For many of them it was the first such meeting with high-school teachers in twenty years.

Dare I suggest that high-school and college teachers exchange places about every fifth year? I think the skies would not fall. At least it would seem possible to get college teachers of freshmen or sophomores to spend one day a year in a high school. Hundreds of them have not been inside a high school since they were eighteen!

The solution I have proposed for the college admissions problem is not something entirely new. Many colleges throughout the country have arrived at substantially this solution in the course of the last ten or twenty years.

In California, most of the colleges, including many with the highest standards of scholarship for entrance and graduation, no longer prescribe required patterns of high-school subjects.

But the State University still does. What the University of California prescribes is the dominant influence in shaping the curriculum of the high schools of the state. I have heard high-school principals advise students and their parents in these words: "Yes, it is true that students are accepted by most of the colleges of the state on the basis of a good record and demonstrated ability in high school. But to be admitted to the State University you must take the subjects the University requires. I advise playing it safe by doing what the University of California demands."

It seems to me that secondary schools of California can render their full service to the youth of the state only when the State University ceases to obstruct and exerts its powerful influence in helping the high schools to attain a high degree of excellence in everything they do.

Neither the college nor the high school stands alone. They both provide for the development of young people, the high school when they are younger, the college when they are a little older. The one is no more important to society than the other. Neither one should attempt to dominate the other. They must work together in close co-operation, each helping the other to improve its service to the people of California.

# Secondary School–College Relations in Michigan

By CLYDE VROMAN

• **The "Michigan Secondary School–College Agreement" has received widespread attention from those interested in the problem of college admission requirements. It is a plan in which the colleges of the state agree to disregard in their admission requirements the pattern of subjects pursued by high-school students in accredited secondary schools, provided that the schools recommend for admission only those from the more able group of students, and further that they will provide the colleges with adequate personnel information concerning those whom they recommend. Now that this plan has been in operation for several years, a description of the relations between secondary schools and the colleges of Michigan should be helpful in considering the problem in California. We are pleased, therefore, to present in the symposium this article by Dr. Clyde Vroman who is Director of Admissions for the University of Michigan.**

One of the persistent problems in American education is effective co-operation between secondary schools and colleges. As schools find their major function to be the education of all the children of all the people, with preparation for college only one of their major objectives, a new type of school and college relations is imperative if schools are to serve effectively their students and their communities. This report deals with the progress and status of such relations in Michigan.

Before we report specific activities and projects, let us look at some of the unique factors in Michigan that make these desirable school and college relations possible.

First, the State Department of Public Instruction has exercised unusual leadership and imagination in the last two decades. It has effectively implemented a philosophy that educational direction and growth must come from within each community, that education must meet local needs, and that experimentation and change are desirable.

Second, Michigan has been favored with an active Michigan Secondary School Association for over twenty-five years. Its membership includes not only principals and administrators from junior and senior high schools but also many college representatives. It is a strong professional group well able to handle the problems of secondary education.

Third, the colleges of Michigan are organized in the Michigan College Association. This Association meets twice a year and among other items deals with matters affecting both secondary schools and colleges. There is prevalent in this group an appreciation of the unique problems which secondary schools face and a desire to share responsibilities and to seek solutions through co-operative efforts.

And fourth, Michigan has a strong Association of Collegiate Registrars and Admissions Officers. These are the people who most frequently deal with matters of major importance to schools and colleges, the proper handling of students, credits, and related mechanics.

These four factors constitute the basic framework for good school and college relations in Michigan. The remainder of this discussion will be devoted to a description of some of the outstanding developments in school and college relations in Michigan.

The major responsibility for improving the secondary-school curriculum in Michigan through a state-wide program has been assigned to the Michigan Secondary School-College Agreement. This is a co-operative, voluntary association representing the Secondary

School Association, the Association of School Administrators, the College Association, and the State Department of Public Instruction. All Michigan colleges and over 200 of the 635 accredited high schools in Michigan are members of the Agreement.

The text of the Agreement states that the colleges agree to disregard the pattern of subjects pursued in considering for admission the graduates of selected accredited schools, provided that they are recommended by the school from among the more able students. The Agreement makes certain provisions for students entering specialized college curricula and places four major responsibilities upon member high schools.

A second unique development in school and college relations in Michigan is the work of the joint Committee on High School and College Relations. This Committee is composed of a Committee on College Relations, appointed by the Secondary School Association, and a Committee on High School Relations appointed by the Association of Collegiate Registrars and Admissions Officers. These two committees function as one joint committee. All matters dealing with high-school and college relations, except curriculum, are considered the province of this Committee, unless such matters are already being studied by other committees. The Committee is now in its third year of activity. Following are the six major projects under way at the present time:

I. *Uniform College Application Blank.* A recommended uniform blank is in tentative form and work is continuing.

II. *Career Day Handbook.* The Handbook is designed to give assistance to high schools in the planning and operation of the rapidly growing "career days." A similar Handbook on College Days was prepared last year.

III. *Campus Days.* The rapid and somewhat excessive growth of events organized by colleges, schools, and lay groups, which take pupils out of high schools, has become a problem in Michigan. The Committee is preparing policies and guides to deal with this problem.

IV. *Reports to High Schools; Parent Relations.* Major emphasis has been placed on: notice of disposition of applications for admission; notice of the student's registration at the college; academic progress reports; and notice of graduation or withdrawal from college.

V. *Registration Procedures, Orientation Programs, Class Placement, and Counseling in College.* No report on this item is available at this time, but it is already apparent that much can be done in this area.

VI. *Scholarships.* The current increase in the number of scholarships available from colleges has created many problems for schools. The Committee is dealing with the problem from the standpoint of appropriate publicity, basis for granting scholarships, "honor" awards versus financial awards, multiple applications for various scholarships by the same student, activities of college alumni, recommended procedures, and clarification of terms.

A third important outcome of the fine relationship between schools and colleges in Michigan has been the joint annual meetings of the Secondary School Association and the Association of Collegiate Registrars and Admissions Officers during the past two years. This arrangement has facilitated greatly the common understandings and personal friendships which are so basic to good school and college relations.

A fourth type of co-operative project is carried on by various colleges and universities in Michigan. For example, the University of Michigan invites principals and counselors to campus each fall to interview freshmen from

their schools and to share with the University information and suggestions to improve both secondary and college education. Also, it is a regular policy of the University to seek the advice and counsel of secondary-school people when considering a change which may affect the schools, such as a change in admissions requirements.

In this brief discussion we have tried to show the excellent progress which Michigan has made in school and college relations. We have pointed out some of the major forces which must be involved on a state-wide basis if significant changes are to occur. It is hoped that the experiences we are having in Michigan may be of interest and perhaps helpful to our friends in other states.

If and when we consider that we have school and college relationships within each state on a satisfactory level, there still will remain the challenging task of co-ordination and reciprocity between the states.

# Admissions Criteria: A Review of the Literature

By JOSEPH P. COSAND

**• In approaching the problem of college admission practices, the considerable body of research bearing upon it should be consulted. *Journal* readers will appreciate the thoughtful analysis made by Joseph P. Cosand in his report to the California Committee for the Study of Education. His review of the evidence concerning the effectiveness of nine major criteria for admissions emphasizes the superiority of multiple rather than single criteria in screening candidates for entrance to college. He reports the trend away from a set pattern of required courses and the increased emphasis upon qualitative standards.**

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The search for an acceptable college admissions policy has been proceeding for generations—and with as much diligence as were those efforts of our ancestors in their quest for the "Philosopher's Stone." However, I do not intend to imply that the results have been as negative, for there is much evidence of a growing understanding of the complexity of the problem. We no longer believe that some one method will be developed which will give us the answer, but rather look toward a combination of methods which cumulatively will provide a better solution—and by better solution, we mean one which will most benefit the student.

We are agreed that admission standards are mandatory if we are to prevent chaotic conditions from developing in our colleges. However, we must also agree as to what degree of flexibility is beneficial for both the student and the college. The nature of the admissions office itself tends to control both the college and the secondary schools preparing students for entrance into the college. If this is so, we may well ponder those lines of Robert Frost

—"Before I built a wall, I'd ask to know what I was walling in or walling out, and to whom I was like to give offense."

Not only are our colleges and their admissions offices a reflection of the society in which they exist, but also they are in turn exerting leadership on society. By their policies they determine to a large degree who is to be educated. If the colleges are to serve society as true educational leaders, and thus meet the demands society places upon them, we must be certain that there is a belief in flexibility, and a mature consideration of the individual differences of those students desiring admission. May I quote from John Johnston,[1] who in 1924 made the following statement: "An institution whose resources are limited only by the wealth of a state and the goodwill of its people, and whose aim is to give those people the support they furnish—must undertake to make the most of capable young people, rejecting none by a hard rule insufficiently proven. However, if it can be shown that the performance of the applicant gives ground for predicting with only negligible error those individuals who will fail in college work, the college can act on such information and would not be justified in neglecting this means of improving its service to society." This statement emphasizes the need for a closer working agreement between the secondary schools and colleges, and an honest understanding of the admissions problem. It demands that we achieve a solution best designed to benefit the student first, then the secondary and collegiate institutions.

In theory, we have made much progress during the past twenty years in terms of selective methods emphasizing the individual differences of students. However, much of the practice is still in terms of the traditionalized methods of rigid control which have been so detrimental to the growth of the secondary schools on a broad curricular base. Certainly the influence of admissions requirements should be positive rather than negative, and every change in entrance requirements should be regarded in the light of its possible effect on the secondary school, whether high school or junior college. In fact, all changes in admissions policies should be the logical outgrowth of the educational philosophy of the institution, and should be made only after careful consideration of the results to be anticipated with regard to the students, the college, the secondary school, and the community or society in general.

Much could be said concerning such dilemmas as standards *vs.* public relations, and enrollment *vs.* standards, but these vary so according to the type of institution concerned that it is beyond the scope of this paper. Suffice it to say that if colleges honestly attempt to serve society rather than their own ends, much of the confusion regarding admissions requirements would be eliminated. It is apparent that the admissions officer must have a philosophy that reflects the purpose of his institution, and that does not allow temporary pressures to sway him from his course. If the admissions officer can adopt the viewpoint stated by Charles Davis[2] of Michigan that the entrance requirements ordinarily are neither a line of demarcation nor an average of acceptance, but rather a point of view from which the admissions officer looks at any application, he may then be both objective and flexible in his judgments. However, if the effectiveness of an admissions office is to be increased, it is mandatory that there be continuous and systematic checking of the academic success of the students in terms of their entrance quality.

[1] John Black Johnston, "Predicting Success or Failure in College at the Time of Entrance." *School and Society*, 19: 772–76; 20: 27–32, June 28–July 5, 1924.

[2] Charles M. Davis, *A Survey of Transfer Admissions in Colleges and Universities*, University of Michigan, 1940.

Before discussing the different admissions methods now used, I would like to recall a statement made by Ralph Prator[3] of Bakersfield College, "It is evident that the emphasis on entrance requirements during the last forty-six years has shifted somewhat, but instead of new criteria replacing the old criteria for selecting college students, we add the new, but we retain the old." This statement has been borne out again and again in surveying the literature on college admissions.

It is possible to divide the admissions methods into fourteen different categories. However, some are used far less often than others, and only those generally accepted by a large percentage of collegiate institutions will be discussed. These include:

1. Completion of a set pattern of required courses
2. Required minimum academic achievement for a set pattern of courses
3. Required minimum academic achievement in secondary-school work
4. Required minimum academic achievement for the last two or three years of preparatory work
5. Rank in high-school graduating class
6. Entrance tests (aptitude and subject)
7. Principal, counselor, teacher recommendations
8. Personal interview
9. Combination of two or more of the above.

### 1. COMPLETION OF A SET PATTERN OF REQUIRED COURSES

This is generally thought of as the Carnegie unit method which reached its zenith of popularity between 1920 and 1930 when nearly all of the colleges had instituted single sets of academic requirements along the line of the Carnegie units. However, a reaction set in, and today this method is under severe attack. This reaction has resulted in a trend away from any rigid adherence to a set pattern of required courses and toward an evaluation of students' work from a qualitative basis rather than from a quantitative viewpoint. President Lowell[4] of Harvard compared the unit plan to wheat poured into a grain elevator, whereas it is often more like fruit placed into a cold storage plant without the means of refrigeration. Or perhaps like the contents of an incinerator. Be that as it may, the unit plan as a quantitative rather than qualitative method of selection is generally discredited and has given way to the next three methods.

### 2. REQUIRED MINIMUM ACADEMIC ACHIEVEMENT FOR A SET PATTERN OF COURSES

This modification is a more rigorous interpretation of the previous method and is therefore open to the same criticisms. It is used today by more colleges and universities than any other single method. It *does* place emphasis upon quality, and quality has been consistently shown to be one of the best measures of future academic success. However, it continues to strait-jacket a secondary school's curriculum and because of this, *in theory*, is unacceptable to secondary-school people.

### 3. REQUIRED MINIMUM ACADEMIC ACHIEVEMENT IN SECONDARY-SCHOOL WORK

Most literature recommends this as one of the best if not the best method for the prognosis of student success in college. College success in terms of secondary-school success has shown a fairly high and consistent correlation from 0.50 to 0.65, in the various studies made. These correlations tend to bear out that the average grade is the best

[3] Ralph Prator, *Administration of Admission to Colleges and Universities*, Unpublished Ed.D. Dissertation, University of California, 1947.

[4] W. H. Cowley, "The Current College Admissions Situation," *Educational Record*, Supplement No. 13, pp. 34–46, January 1940.

single criterion for predicting success. Certainly it favors the statement that ability, and not amount of secondary-school training in *a subject*, is the decisive factor in college success.

Of special interest to us here are the studies being made in terms of the removal of certain grades in computing the over-all secondary-school grade average. Practically no correlation is found between physical education, health education, crafts, certain family life courses, etc., and successful college work. In fact, it is believed that when high grades in these courses raise an over-all average so that the student may enter a college, his chances of success are negligible. Therefore, we will view with interest the results on these research studies. This is perhaps a combination of methods two and three and may bring us further along our thorny path of admissions policies.

Since this method is favored by the majority of both college and secondary-school administrators, the modification suggested may add to its popularity. But may I again sound the warning that no single method is now believed to be the best criterion for admission.

### 4. REQUIRED MINIMUM ACADEMIC ACHIEVEMENT FOR THE LAST TWO OR THREE YEARS OF PREPARATORY WORK

Since the advent of the junior high schools there has been a trend toward considering only the last two or three years of high school in the evaluation of the secondary record. This has gained popularity as educators continue to move in the direction that the ninth year is an experimental year, and should not be included in the over-all high-school average. Use of this method will enable students to enter college without being penalized for an inferior beginning in their high-school preparatory courses. Students entering under this method at the University of California have done approximately the same as those students entering under the previous method.

### 5. RANK IN HIGH-SCHOOL GRADUATING CLASS

Next to the average-high-school-grade method, this method has proven to be the most popular single method for predicting collegiate success, and many believe it to be the best. The correlations vary between 0.50 and 0.60. The literature shows close agreement in the interpretation of class rank. A statement by E. C. Seyler[5] is indicative of the general attitude. "The value of rank in high-school classes offers a means of making predictions more accurate than a guess would be, and as such has distinctive value." He states further that it is possible to predict with considerable accuracy the scholastic success in the freshman year of any group of students whose percentile rank in class falls within certain limits.

### 6. ENTRANCE TESTS (APTITUDE AND SUBJECT)

Tests are used extensively but seldom as single criteria. Many studies have shown that when certain tests are used in conjunction with other criteria, multiple correlations up to 0.80 are possible in terms of college success. The University of Chicago has been particularly active in this field and has devised an entrance program in which three tests are used—the A.C.E. test, a special reading test, and a special writing test. These together have consistently given a multiple correlation of from 0.65 to 0.72 with collegiate success.

Perhaps the most used single-type test to be combined with other criteria has been various forms of English tests. By themselves, they correlate from 0.40 to 0.50 with college success, and as such have not been used as single

[5] E. C. Seylor, "The Value of Rank in High School Graduating Class for Predicting Freshman Scholarship," *Journal of the American Association of Collegiate Registrars*, 15: 5–22, October 1939.

criteria. Some research has been completed in terms of specific subject tests for further work in the same subject field. These have had varying degrees of success, and accordingly varying degrees of support from collegiate institutions. In 1934 David Segal made a comprehensive study of various single tests, and in using them as single predictors for college success found correlations ranging between 0.38 and 0.51. At the same time he averaged twenty-three studies of high-school marks as a single predictor and showed an average correlation of 0.55. This again brings out the advantage which high-school marks have consistently held over tests when used as single criteria for prognosis of college success.

### 7. RECOMMENDATION—PRINCIPAL—COUNSELOR—TEACHER

This is one of the top five methods used, and most recommended by principals themselves. In particular, it is used with respect to students who do not quite measure up academically, but who, in the opinion of the principal, are capable of doing college work. The literature is increasingly filled with articles emphasizing the importance of principal, counselor, and teacher recommendations as guidance tools, but not as sole admissions criteria. These recommendations are believed to be of particular importance with regard to the subjective factors affecting a student's academic and social success. The articles of Henry Borow, who has been doing recent research work with respect to the many subjective factors affecting collegiate success, are well worth reading.

### 8. PERSONAL INTERVIEW

Admission on probation, personal interview, and careful evaluation of the past record in terms of progress are all related to the philosophy of selection on an individualized basis. This is a rapidly growing method, and is a part of the expanding programs of guidance now offered by many of our colleges and universities. The belief that many unmeasurable subjective factors should be brought into consideration in the evaluation of a student's application for admission is gaining strength, and rightly so. Too long we have tended to treat students as pawns on paper without ever attempting to make a personal evaluation. The developing guidance programs in our colleges and universities, working in close harmony with the high schools and junior colleges, are objective evidence of the present trend in college admissions procedures. Bulger[6] makes the plea for continuing guidance—high school, junior college, college—in which the personal data are cumulative, and become a part of the data that are passed on from high school to college. He suggests that follow-up studies go both ways, and by so doing, the secondary school and the college will each help develop the other's program of education. In other words, high schools, junior colleges, and colleges should all extend their guidance services, and by so doing bring about a more realistic articulation of the three institutions.

From the literature, one is forced to conclude that pre-admissions counseling is becoming an increasingly important part of the admissions office, and that the question to be answered with regard to each student is, "Is this applicant well advised to attempt the course for which he is applying in *this* college." This forces the college to adopt a student-centered admissions policy in which the student's interests are first served, then those of the college. The present growth in co-operation between the California junior colleges, state colleges, and state universities is evidence of the desire to place the student first. The attempt at mu-

[6] Paul G. Bulger, "What About Articulation of the Secondary School and College?" *Bulletin of the National Association of Secondary School Principals*, 34: 144–49, March 1950.

tual understanding and co-operation made between these three types of institutions during the last few years is one of the brightest beacons we have yet had in admissions policies. Since the trend continues in the same direction, we may conclude that more understanding and co-operation are forthcoming.

Michigan State has recently undertaken a summer counseling program with prospective students living on campus for a week. The results have been favorable and the articles telling of the plan are well worth reading. In fact, in this plan and in others as well, the endeavor to understand the nature and needs of prospective students has become so complete and disinterested that it not infrequently results in the guidance of students for *their* greater good toward other institutions, or toward some quite different unacademic career. This is also true of many state universities, and of many of the larger private colleges and universities when there is no problem of survival.

At the National Conference on Higher Education in 1948, criteria were established which were deemed essential for an effective admissions program. Among these were: first, to pay greater attention to the personal qualifications of the applicant; second, to try to make a decision as to whether the applicant is well advised to attempt the course for which he is applying at that particular college; third, to realize that pre-admissions counseling is becoming an increasingly important part of the admissions officer's responsibilities. Ralph Prator concludes in his doctoral dissertation that intelligent guidance is the most reliable means of selecting the best college risks from a group of prospective candidates, and that no guidance is intelligent unless it is given fairly on the basis of a complete array of facts.

Two recently initiated programs are of importance in the admissions field because they have been developed through joint high school–college co-operation, and are state wide in scope. They are the Michigan Secondary School–College Agreement, and the Illinois Program. The reviews of these make excellent reading and are challenging in their approach to the admissions problem. However, they are too detailed to give more than passing mention in this paper. They embody in their plans several of those specific criteria previously mentioned. The Michigan Plan in particular brings out the importance of the necessity for adequate personnel files, follow-up studies, and secondary-school guidance concerning occupations and colleges. May I again recommend these two plans for your perusal?

Ralph Tyler[7] brings out the need for close co-operation when he lists his six requirements for admission:

1. We need to know whether the student has the general intellectual, manual, and social abilities and skills generally prerequisite for successful work in school or college.
2. We need to know if his interests are in the fields represented by the school or college, or can be related to those fields.
3. We need to know if he has any habits, attitudes, or emotional predispositions which are likely to block successful work in the institution.
4. We need to know how many students to select.
5. We need to know for what related materials the students will be held responsible.
6. We need to know how we will place the students after admission.

The answers to these needs are not to be found alone by the secondary schools or by the colleges, but only through joint co-operation and action.

[7] Ralph W. Tyler, "Placement Tests as a Means of Determining Advanced Standing at the University of Chicago," *Journal of the American Association of Collegiate Registrars*, 20: 520–26, July 1945.

This entails a close integration of the secondary-school and college programs, especially in the guidance and counseling area. It seems only sensible that the individual himself should be studied closely with respect to the planning and conduct of the educational program. Many of our past and yes, present methods, have dealt objectively with the student concerned, but the wealth of constructive recommendations for changes in these procedures have brought indications of a healthy trend.

Many say we are not in need of a new plan, but that our present admissions criteria should be modified and improved. This is the method of attack of most colleges today. Through the improvement of tools used for the measurement of abilities, achievement, and interest; through the development of better ways for appraising and describing personal characteristics; through the substitution of qualitative measures of competence for the present too frequent quantitative units of years of study; and, through the establishment of a broader base of acceptable secondary-school courses, we may be able to make our college admissions policies more applicable to those they so vitally concern, the *individual students* desiring admission. This is a mandate for both the college and the secondary school, since each has equal responsibilities for the determination of a youth program consistent with our philosophy of educational opportunity. Neither should dictate, neither should withdraw, neither should "pass the buck," but both must be interested and concerned sufficiently to work together in the development of an admissions procedure for all concerned: the *student,* the *college,* the *secondary school.*

In reviewing the literature, many studies brought out correlations between predictors and collegiate success which were of significance, either because of a particularly high figure, a low figure, or a series of consistent figures. The following tables which give a picture of these predictors are self-explanatory. Of special interest is the table giving the multiple correlations, which points out strongly the advantage of several predictors over a single predictor, and as was mentioned previously, is the trend in admissions policies today. Many research studies are now being carried on in admissions procedures, and the results of these studies are being anticipated by the colleges, secondary schools, and testing agencies. Certainly a review of the literature for the period 1951–55 will bring a wealth of material for all admissions offices—but I would imagine that the evidence will continue to point in the direction of:

1. Multiple predictors versus the single utopian predictor;
2. The need for *more* emphasis on individualized selection; and
3. The demand that secondary schools and collegiate institutions develop and bring into close working agreements their guidance programs.

TABLE I

CORRELATION OF SINGLE PREDICTOR WITH COLLEGE SUCCESS

| Study | Date | H.S. Grade | H.S. Rank | A.C.E. Q | A.C.E. L | A.C.E. T | Mental | Gen. Achiev. | S.A.T. Verbal | S.A.T. Math. |
|---|---|---|---|---|---|---|---|---|---|---|
| Brooklyn College, Doppelt... | 1949 | .63 | | | | .31 | | | | |
| Buffalo, Wagner ..... | 1934 | | | | | | .45 | .56 | | |
| California (Men) (L & S) Educational Testing Service | 1949 | .48 | | | | | | | .31 | .35 |
| California (Women) (L & S) Educational Testing Service | 1949 | .49 | | | | | | | .45 | .32 |
| California (Chemistry) Educational Testing Service | 1949 | .41 | | | | | | | .39 | .47 |
| California (Engineering) Educational Testing Service | 1949 | .43 | | | | | | | .21 | .32 |
| California Tech. Educational Testing Service | 1949 | | | | | | | | .42 | .52 |
| Chicago, Diederich ..... | 1949 | | | | | .55 | | | | |
| Christian College, Freeman .. | 1948 | | | | | | .56 | | | |
| C.C.N.Y., Long ..... | 1943 | .54 | | | | .29 | .45 | | | |
| Composite Study, Borow .... | 1946 | | .55 | | | | .45 | .50 | | |
| Composite Study, Leonard ... | 1945 | .55 | | | | | .44 | .55 | | |
| Composite Study, Segal ..... | 1934 | .55 | | | | | .45 | .55 | | |
| Composite Study, Segal ..... | 1937 | .49 | | | | | | | | |
| Edds and McCall ..... | | .65 | | | | .48 | .50 | | | |
| Georgia, Osborne ..... | 1949 | | | .40 | .47 | .49 | | | | |
| Illinois, Thomann ..... | 1948 | | | | | .44 | | | | |
| | | | | Quant. sub. | | | | | | |
| Long Beach C.C., Brown .... | 1949 | | | .33 | .30 | .40 | | | | |
| | | | | Ling. sub. | | | | | | |
| Long Beach C.C., Brown .... | 1949 | | | .18 | .54 | .44 | | | | |
| Long Beach C.C., Brown .... | 1949 | | | .34 | .32 | .40 | | | | |
| Michigan, Wallace ..... | 1950 | | | .29 | .37 | .41 | | | | |
| Mills College, Educational Testing Service ..... | 1947 | | .36 | | | | | | .32 | .33 |
| Minnesota, Kinney ..... | 1932 | | | | | | .44 | | | |
| Myers and Schultz ..... | 1948 | | | | | | | | .44 | .39 |
| Myers and Schultz ..... | 1949 | | | | | | | | .47 | .39 |
| Occidental, Educational Testing Service ..... | 1948 | .52 | | .33 | .37 | .41 | | | | |
| Oregon, Douglas ..... | 1931 | .56 | | | | | .45 | .55 | | |
| Peabody, Cochran ..... | 1949 | .63 | | | | .43 | | .34 | | |
| Peabody, Gladfelter ..... | 1946 | .68 | | | | | | | | |
| Pomona, Educational Testing Service ..... | 1948 | .48 | | .30 | .32 | .36 | | | .49 | .31 |
| Puerto Rico, Bau ..... | 1949 | .51–.70 | | | | | | | | |
| Santa Barbara, Durflinger ... | 1942 | | | | | | .52 | .48 | | |
| Whitman, Educational Testing Service ..... | 1947 | .47 | | | | | | | .49 | .30 |
| Wisconsin, Froehlich ..... | 1941 | | .62 | | | .55 | | | | |
| Wisconsin, Froehlich ..... | 1944 | | | | | | .48 | | | |
| Wisconsin, | | | .58 men | | | .42 men | | | | |
| Lins ..... | 1948 | | .62 women | | | .49 women | | | | |
| Range ..... | | .41–.68 | .36–.62 | .29–.40 | .32–.47 | .29–.55 | .44–.56 | .34–.56 | .21–.49 | .30–.52 |

## TABLE II

### Multiple Correlations of Predictors with College Success

| Study | Date | Cases | A.C.E. + Reading + Writing | H.S. Grade + E.T.S. Battery | Otis I.Q. + Iowa English | H.S. I.Q. + Study Performance | 8 Test Achievement | H.S. Grade + A.C.E. | S.A.T. V S.A.T. NV H.S. Grade |
|---|---|---|---|---|---|---|---|---|---|
| Univ. of Chicago, Diederich | 1949 | | .72* Consistently between .70—.80 on | | | | | | |
| Brooklyn College, Doppelt | 1949 | 7,638 | | .63 | | | | | |
| Christian College, Freeman | 1948 | 1,000 | | | .68 | | | | |
| Composite Study, Leonard | 1945 | | | | | .75 | | | |
| Michigan, Wallace | | | | | | | .55 | | |
| Wisconsin, Lins | 1928 | 756 | | | | | | .71 | |
| Myers and Schultz | 1949 | | | | | | | | .63 |
| Oberlin, Hartson | | | | | | .75 | | | |
| Occidental, Educational Testing Service | 1949 | 164 | | .61 | | | | .54 | |
| Whitman Educational Testing Service | 1947 | 87<br>109 | | | | | | | .51 men<br>.62 women |
| California—Men Educational Testing Service (L & S) | 1949 | 489 | | | | | | | .53 |
| California—Women Educational Testing Service (L & S) | 1949 | 687 | | | | | | | .59 |
| California Educational Testing Service Engineering | 1949 | 134 | | | | | | | .48 |
| California Educational Testing Service Chemistry | 1949 | 47 | | | | | | | .50 |

| Study | Date | Cases | H.S. Grades + I.Q. | English Grade + I.Q. | H.S. Grades + English Grades | H.S. + I.Q. English Grade | H.S. Grade + Wisconsin | H.S. + A.E.C. + Wisconsin | I.Q. + Rank + Content |
|---|---|---|---|---|---|---|---|---|---|
| Edds and McCall | | | .71 | .70 | .54 | .81* high | | | |
| Hamline, Root | | | .56 | | | .83 | | | |
| San Diego, Hepner | | | .56 | | | | | | |
| Wisconsin, Froehlich | | | | | | | .71 | .72 | |
| Composite, Borow | 1946 | | | | | | | | .75 |
| Marquette, Butsch | | | | | | | | | .70 |

## TABLE III

### Correlation of High-School Subject with College Subject

| Study | Date | Cases | Science | English | Foreign Language | Math. | Social Studies | Chemistry | Voc. H.S. College |
|---|---|---|---|---|---|---|---|---|---|
| California Tech., Educational Testing Service | 1949 | 139 | .59 | | | .50 | | .48 | |
| Composite Study, Segal | 1937 | | .33 | .42 | .31 | .38 | .37 | | .13 |
| Oregon University, Douglas | 1931 | | .54 | .49 | .46 | .44 | | | .35 |
| Peabody College, Gladfelter | 1946 | | .48 | .59 | .48 | .36 | .66 | .65 | |
| | | | Biology | | | | | | |

## TABLE IV

CORRELATION OF PREDICTOR WITH SUBJECT PROFICIENCY

| Study | Date | Cases | English | Social Studies | Foreign Language | Math. | Physical Science | Fine Arts | Life Science |
|---|---|---|---|---|---|---|---|---|---|
| Boston University, Lanigan | 1946 | 163 | Otis .29 | Otis .42 | Otis .23 | Otis .24 | Otis .53 | Otis .38 | |
| Boston University, Lanigan | | | A.C.E. .33 | A.C.E. .50 | A.C.E. .22 | A.C.E. .32 | A.C.E. .44 | A.C.E. .36 | |
| Boston University, Lanigan | | | Reading .54 | Reading .39 | Reading .42 | Reading .19 | Reading .45 | Reading .32 | |
| Composite Study, Leonard | 1945 | | Mental .38 | Mental .35 | Mental .32 | Mental .36 | Mental .36 | | |
| Composite Study, Leonard | | | Achiev. .42 | Achiev. | Achiev. .36 | Achiev. .32 | Achiev. .32 | | |
| Composite Study, Leonard | | | Sp. Achiev. .42 | Sp. Achiev. | Sp. Achiev. .40 | Sp. Achiev. .45 | Sp. Achiev. .45 | | |
| Georgia, Osborne | 1949 | 958 | A.C.E. Q .43 | A.C.E. Q .33 | A.C.E. Q .33 | A.C.E. Q .40 | A.C.E. Q .43 | A.C.E. Q .14 | A.C.E. Q .46 |
| Georgia, Osborne | | | A.C.E. L .57 | A.C.E. L .46 | A.C.E. L .46 | A.C.E. L .35 | A.C.E. L .46 | A.C.E. L .31 | A.C.E. L .54 |
| Georgia, Osborne | | | A.C.E. T .57 | A.C.E. T .41 | A.C.E. T .45 | A.C.E. T .43 | A.C.E. T .44 | A.C.E. T .32 | A.C.E. T .54 |
| Michigan, Wallace | 1950 | | A.C.E. Q | A.C.E. Q .16 | A.C.E. Q .18 | A.C.E. Q .28 | A.C.E. Q .26 | | |
| Michigan, Wallace | | | | A.C.E. L .26 | A.C.E. L .29 | A.C.E. L .18 | A.C.E. L .32 | | |
| Michigan, Wallace | | | | A.C.E. T .26 | A.C.E. T .28 | A.C.E. T .26 | A.C.E. T .33 | | |
| Michigan, Wallace | | | | Vocabulary .24 | Vocabulary .25 | Vocabulary .12 | Vocabulary .27 | | |
| Michigan, Wallace | | | | Reading .24 | Reading .24 | Reading .22 | Reading .28 | | |
| Michigan, Wallace | | | | Iowa F.L. .26 | Iowa F.L. .45 | Iowa F.L. .38 | Iowa F.L. .30 | | |

# College Entrance Requirements

By O. I. SCHMAELZLE

**• No symposium on the subject of college admission requirements would be complete without a spokesman for the secondary schools. As chairman of the Affiliations Committee and First Vice-President of the California Association of Secondary School Administrators, Mr. O. I. Schmaelzle fittingly serves in this capacity. In his article "College Entrance Requirements" Mr. Schmaelzle reviews the history of the problem in California and reports what he considers to be the advances that have been made.**

**Mr. Schmaelzle is Principal, George Washington High School, San Francisco, where he is well known for his active leadership in secondary education.**

Over a period of years a recurring subject of discussion in the California Association of Secondary School Administrators has been that of college entrance requirements. In reviewing this subject it is necessary to examine not only the requirements set up by the State University, but also those in effect in California's state colleges and junior colleges.

The junior-college entrance requirements are easily catalogued. As long as the state law designates the junior college as a part of the secondary-school system, any person with a high-school diploma may enroll in the junior college in his school district. It would therefore be unlawful not to accept all graduates from the high-school district. The secondary-school administrators like this relationship since it often happens that a student who does just passing work in high school will in junior college develop the degree of maturity and seriousness necessary for success at the college level. Then too, since junior colleges offer terminal courses, the non-college type of student has a chance to try out a field of endeavor that may become his life's work. It is almost a unanimous desire on the part of the high-school principals of California that the junior-college entrance requirements remain as they are now—open to all high-school graduates.

For various reasons, entrance requirements are not uniform for all state colleges. Principals of high schools are unable to ascertain whether the lower division of state colleges will serve as a proving ground for the upper division and graduate work at the University.

Through the efforts of the Affiliation Committee of the state colleges and high schools, discussions have been taking place to determine how far a state college should go in screening out high-school graduates. Many high-school principals object to certain college entrance tests currently in use by some state colleges. These administrators prefer tests in mathematics, reading, etc., be dropped from the battery given high-school students applying for admission. There seems to be little objection to giving tests to the entering group for the purpose of guidance. Since it is just recently that state colleges have set up some requirements for entrance, this matter should be considered jointly by the state college group and the California Association of Secondary School Administrators.

For a period of several years the Affiliation Committee of the University of California and a committee of high-school principals appointed by the California Association of Secondary School Administrators have been meeting at least twice a year to work on and to revise the entrance requirements to the University. There have been several definite changes in these requirements. The "A" to "F" requirement at the suggestion of some high schools has been broadened so as to include history or social science. Recently another proposed admission plan was submitted by another group of principals but before

final action could be taken representatives from the Office of Admission offered a broader and more inclusive plan. Since this liberal plan was proposed by the University and since it shows how fully the University desires to co-operate with the high schools, a statement of this new proposal is given here:

> University authorities believe that high-school students who follow the pattern of subjects outlined, together with the additional subjects recommended for particular majors, will be well prepared for work in the University. However, the University does not wish to exclude a student who has followed a University preparatory program of studies recommended to him by his school, and will therefore admit an applicant on "B" average scholarship in a different program of University preparatory studies, provided that the individual high-school program has been previously approved by the Board of Admissions and Relations with Schools.

As can be seen by this new plan, a wider opportunity is offered high-school graduates, without adversely affecting the standards of admission. The scholarship requirements would remain high and would relieve the University of the charge of "dictation" of the high-school program. The plan will preserve the good parts of the old "principal's recommendation" plan for admission.

Many high-school principals will remember the days before 1933 when admission depended upon the principal's recommendation. At that time the high schools were free to make their own subject patterns. After much grief and considerable parental pressures, the principals learned that the principal's recommendation plan was not the one they wanted. The principal's plan was rejected after a trial period.

The plan which replaced it was worked out by both the secondary-school and the University authorities. When this plan was introduced, it contained a clause stating that the University would continue to accept any individual, regardless of high-school grades, on the recommendation of the principal.

At the request of the high-school principals the University of California has not publicized the fact that students will be accepted on the principal's recommendation. But when it was learned (*a*) that the new ruling of the Pacific Coast Intercollegiate Athletic Conference stated that the University was required to print in its publication the fact that students might be admitted upon recommendation of the principal, and (*b*) that some statistical tables showed that the scholastic achievement of the small number of students so admitted has been poor, the California Association of Secondary School Administrators asked for a revision. The proposal suggested and agreed upon by both the Association and the University is quoted:

> The principal's recommendation be abandoned as a regular method of admission, effective immediately. However, it should be understood that the University Admissions Officers on the various campuses will continue to consult high-school and junior-college administrators in regard to the admission of applicants with minor deficiencies, and that these Officers will also welcome suggestions from high-school and junior-college administrators in regard to the admission of any applicant.

Another practice which caused concern to several high-school principals is that of admitting nonhigh-school graduates who pass college entrance examinations. At the fall meeting of the Affiliation Committee of the Secondary Schools and representatives of the University, the high-school group pointed out that students eager to accelerate, could be admitted to the University of California without high-school graduation via the college entrance examination board examinations. Immediately the University representatives responded that they were sure that the University would be willing to adopt the policy of discouraging any indiscriminate use of the College Entrance Examination Board examinations as a method of admission. To further the fine relations with the high-school asso-

ciation the University authorities proposed this agreement.

> There be stated in the University of California publications that admission to the University by the College Entrance Examination Board examinations method is open only to high-school graduates. However, the Directors of Admission will be happy to give consideration to the applications of exceptional students when these applications have been endorsed by the high-school principal.

Although the Subject A Examination is not, strictly speaking, an entrance examination, it has caused much concern. Students who fail in the Subject A Examination may matriculate in the University if regularly accepted but must take English grammar courses without credit. Again, this procedure is an illustration of the co-operative work carried on between the California Association of Secondary School Administrators and the University. It was pointed out by the high-school representatives at the fall Affiliations Committtee meeting that a number of high schools have been criticized by their local press for the large number of failures in the Subject A Examination. It was the impression of some of the principals that the majority of students who failed the Subject A Examination were those who would not have been eligible to enter the University on the basis of their achievement in high school. Principals believed that it was this group of students who lowered the achievement record in the Subject A Examination, causing some schools to appear to be doing an unsatisfactory job of teaching English.

A committee made up of members from the high schools, junior colleges, Office of Relations with Schools, and Subject A teachers was appointed to study the problem. The result of deliberations of this committee was most satisfactory to all concerned. Unofficially the plan will be to let anyone who so desires take the Subject A Examination, but the schools will receive a report only on those students who actually had registered in the University.

The friendly and sincere co-operation of the University of California and the California Association of Secondary School Administrators should be noted. The old idea that the University is dictating in the matter of admission requirements to the schools can hardly be justified. With the Affiliations Committee of the two institutions working harmoniously, the best interests of the students will be served. Through the development of practical entrance requirements to the University of California a co-operative relationship between secondary schools and the University will be maintained. It is true that no pattern or plan can be devised that will satisfy all high-school principals and it is certain too that the great majority of the secondary-school administrators would not wish admission requirements to become so lenient that the standards of the high schools would be lowered.

Finally, as long as representatives of the University of California and representatives of the secondary-school administrators work together for the general welfare of the young people themselves, there will be little adverse criticism to action which the group takes. The answer is simple: High schools and the University authorities are planning together and agreeing on a common plan for entrance requirements. Let us continue in this democratic manner.

# In Defense of a Subject Pattern

By H. A. SPINDT

**• The University of California occupies a dominant position in education, not only in California, but throughout the nation and the world. Its policies and practices of college admission exert a powerful influence in the affairs of secondary education. In his report to the California Committee for the Study of Education, Dr. Spindt presents the results of several years of penetrating analysis of the problem. He views the problem broadly from many angles, and suggests a new line of thinking in his research on the differential predictive power of selected high-school subjects. His statement should be studied carefully by every secondary educator who is seriously concerned with the problem of college admission requirements.**

**Dr. Spindt, Director of Admissions, University of California, is so well known as to need no introduction. Before assuming his present position he served as Director of Placement for the University of California. Prior to that he was Superintendent of the Bakersfield Union High School and Junior College District. (He is a member of the Editorial Board of the *Journal*.) He brings a long history of experience and firsthand familiarity with the problems of secondary education, and is uniquely equipped to incorporate the best thinking of secondary and of higher education in an approach to the solution of the problem of college admission requirements.**

Probably in no part of our educational thought have there been as great differences of opinion as in the field of admission to college. Within the field of admission problems, none has created more heat than the arguments about the problem of a required subject pattern—whether there should be one, and of what it should consist. As indicated in Mr. Cosand's report, there have been many studies of subject patterns, and none has shown positively the value of one pattern over another. It seems that differences in subject patterns in high school do not create rank-order lists that show any high degree of correlation with grade point average rank-order lists in college. Many people have concluded from these studies that subject pattern makes *no* difference—if this conclusion were carried to its logical conclusion, we would have to admit that four years of tiddly-winks or bridge would be as good for college preparation as four years of academic courses in high school! I think everyone will agree that high-school algebra is necessary to success in college calculus, and so we must claim that at least some subjects do make a difference in some college majors. Starting with this claim as a minimum, we might next raise the question, or better state the hypothesis, that grades in some subjects are more indicative of subsequent success or failure than are grades in other subjects; while the differences in pattern presented by the high-school graduate will not create a rank-order list that will correlate with subsequent college grade point average, the rank-order list created by grades in some subjects will correlate more closely with subsequent college grade point average than grades in other high-school subjects.

The University of California has had long experience with admission of freshmen on the basis of their high-school records. That admission has never been based merely on completion of a required pattern of subjects, but rather on superior scholastic achievement in a required pattern. Bearing in mind the hypothesis presented in the preceding paragraph, a survey of the experience of the University of California may prove rewarding.

The educational value or validity of any set of requirements for admission to freshman standing seems to me to rest on three criteria:

1. Requirements for admission

should serve to admit those who will probably succeed in the University and defer those who will probably fail. The test for such requirements lies in the degree to which they are a valid selective device.

2. The subject requirements should include studies necessary to normal academic progress in the University from two viewpoints — general educational level and completion of specific prerequisites. In this connection it must be remembered that the University has a deadline to meet at the end of the fourth year of college work.

3. The subject requirements should permit a reasonable degree of freedom to the individual high-school student in his election of courses, and to high-school authorities in determining content of courses, arrangement of courses in curricula, and requirements for graduation.

The history of our entrance requirements shows progress in meeting all three of these criteria. Beginning in 1884 and continuing with various adjustments until the present time, freshman applicants were admitted from accredited high schools on the recommendation of the high-school principal; from 1884 until 1919, this recommendation took the form of certification that certain subjects passed in the high school should be accepted for specific matriculation requirements, while from 1919 to 1931 the principal of the high school had the right to recommend a student for admission to the University without regard to the pattern of subjects studied. To become an accredited high school involved a scholastic "inspection" by University authorities in the years previous to 1937, but since that year, the scholastic performance of graduates of the high school registered in colleges and universities has been utilized as a more important criterion.

From 1869 to 1919 and again from 1931 to the present time, requirements for admission to the University of California included the completion of specified high-school subjects. Trends will appear from a tabulation of such requirements in 1880, 1901, 1915, and 1933.

TABLE I

SUBJECT REQUIREMENTS FOR ADMISSION TO THE ACADEMIC COLLEGES OF THE UNIVERSITY OF CALIFORNIA 1880, 1901, 1915, AND 1933

| 1880* | 1901 | 1915 | 1933 (in its 1952 form) |
|---|---|---|---|
| *English*—Grammar and Rhetoric English Literature | *English*—2 units | *English*—2 units | *English*—3 units |
| *Mathematics* Higher Arithmetic Algebra to Quadratics Plane Geometry | *Mathematics*— Algebra—1 unit Geometry—1 unit | *Mathematics* Algebra—1 unit Geometry—1 unit | *Mathematics* Algebra—1 unit Geometry—1 unit |
| *Greek and Roman History* | *History*—2 units | *History*—1 unit | *U.S. History*—1 unit |
| *Latin*—Caesar, Virgil, Cicero and Latin Grammar and Composition | *Foreign Language* Latin—3 units Greek, French or German—2 units | *Foreign Language* Any language—2 units | *Foreign Language* Any language—2 units |
| *Greek*—Grammar and Composition, Xenophon (4 books), Homer's Iliad (2 books) | *Physics*—1 unit | *Laboratory Science* 1 unit | *Laboratory Science* (Science as designated by high school)—1 unit |
| *Geography and U.S. History* | *Restricted Electives* 3 units | *Advanced courses* in Mathematics, Science, or Foreign Language—2 units | *Advanced course* in Mathematics, Science or Foreign Language 1 unit |
| | | *Restricted (academic) Electives* 2 units | *Unrestricted Electives*—5 units |
| | | *Unrestricted Electives*—3 units | |

* The "unit system" did not come into general use until after 1900.

University control of secondary-school curricula before 1909 was not limited to the subjects required for admission, but included a listing of subjects acceptable toward the required minimum of 15 units. Previous to 1909 this subject list was strictly academic in character, except for geometrical drawing and freehand drawing. In that year a large number of new subjects such as mechanical arts and home economics were included in the list but allowable credit was severely restricted. Three years later Chairman E. P. Lewis of the Committee on Schools recommended that the freshman applicant be allowed three units of unrestricted electives, a recommendation that was approved by the Academic Council in 1915.

It is generally assumed that during the years 1919–31, the University had no subject requirements for admission, because the high-school principal was free to recommend any one he wished. Technically this view was correct, but the State Board of Education established rigid requirements for graduation from high school, and the College of Letters and Science of the University required foreign language and high-school algebra and geometry for junior standing, so that for all practical purposes subject requirements for admission to the University were generally maintained by the high schools; in many high schools of the state the local requirements for a recommendation called for at least 12 units of academic courses.

A comparison of the 1915 and 1933 subject patterns required for admission indicates three changes—the requirement in English was increased from two to three units, the "advanced course" requirement was reduced from two units to one unit, and the combination of two restricted and three unrestricted units was changed to five unrestricted units. Since 1933 only one subject change has been made, in that "history —1 unit" is now restricted to "United States History and Civics— 1 unit."

In comparison with 1915, however, a most radical change has been made in the definition of subject matter in high-school courses. In the 1915 catalogue some thirty-five pages were given over to a detailed prescription of subject content under the heading "Description of the Preparatory Courses." In the 1932 catalogue appears:

> The responsibility for determining the scope and content of courses preparatory to admission to the University and for certifying the course to the University under the proper subject designation of the high-school program rests primarily with the high-school authorities. However, the University believes that the definitions of the College Entrance Examination Board are an adequate guide to the proper organization of college preparatory courses and recommends that they be followed.

In 1934, full responsibility for subject content was placed on the high-school principal:

> The responsibility for the granting of certificates to high-school students lies with the high-school authorities, and students will naturally be guided by their respective principals in making their preparation for entrance to the University.
>
> Upon the high-school authorities rests also the responsibility for determining the scope and content of courses preparatory to admission to the University and for certifying the course to the University under the proper subject designation of the high-school program.

As a reminder to a California reader, or a reference to one unfamiliar with the University of California plans of admission, it may be well to insert here a summary of the various ways in which a high-school graduate may qualify for admission:

1. A "B" average in those subjects of the following required pattern taken in the tenth, eleventh, and twelfth grades of the high school:

| | | |
|---|---|---|
| *a*) | U.S. History and Civics | 1 unit |
| *b*) | English | 3 units |
| *c*) | Mathematics—algebra | 1 unit |
| | geometry | 1 unit |
| *d*) | Laboratory science of 11th or 12th grade level | 1 unit |
| *e*) | Foreign language | 2 units |
| *f*) | Advanced course in mathematics, laboratory science, or foreign language | 1 unit |

2. Achieve a scholarship rank in the highest 10th of his graduating class.
3. Achieve grades of "A" or "B" in twelve units of tenth, eleventh, and twelfth grade work, with not more than two subject deficiencies in the (*a*) to (*f*) list in "1" above.
4. Receive no grades below "C" and achieve "A" or "B" grades in six units of eleventh and twelfth grade work (advanced courses) chosen from the fields of English, mathematics, laboratory science, foreign language, and history.
5. Achieve a standing in the upper half of those who take the College Entrance Examination Board examinations.

The records made by freshmen in their first semester on the Berkeley campus, classified by method of admission, are shown in the pages immediately following. There are included two groups of out-of-state high-school graduates, bona fide residents of California admitted under regular rules and nonresidents of whom we require a scholarships standing in the upper half of the applicants eligible under regular rules. Following the general report in Table II are some tables showing in more detail the records of those admitted by variant methods.

The conclusion which may be drawn from these statistical summaries is that minor deviations from the (*a*) to (*f*) subject pattern are of comparatively little importance, provided the level of achievement in other (*a*) to (*f*) subjects is high.

The most frequent criticisms of the University subject pattern have been made against the limitation of the (*f*) (advanced course) requirement to the fields of mathematics, science, and foreign language; almost as frequent are objections to the requirements of geometry and foreign language. The so-called (*f*) requirement is a requirement of an advanced course chosen from the fields of mathematics, science, or foreign language:

*f*) Advanced course chosen from one of the following:
1 (or 2) units—
1. Mathematics, a total of 1 unit (second-year algebra, ½ or 1 unit; solid geometry, ½ unit; trigonometry, ½ unit);
2. Foreign language, either 1 additional unit in the same foreign language offered under (*e*),* or 2 units of a different foreign language;
3. Science, 1 unit of either chemistry or physics in addition to the science offered under (*d*—Science, 1 unit. This may consist of a year course in one field of science, namely, biology, botany, chemistry, physics, physical science, physiology, or zoology. The science selected must be an advanced laboratory science, and the two semesters must be in the same subject field.)

In general, the requirement may be justified on the ground that a sequence of courses or concentration of work in at least one field in addition to English is desirable from an educational point of view, as opposed to increased spread. The limitation of the fields to mathematics, science, or foreign language is justified on the ground that competitive grading and the quality of student in these classes makes grades received more selective in determining probable success in the University than would be true in other classes. High-school men generally have claimed that social-science courses are equally valuable, and some claim that concentration in any field is just as good as concentration in others.

Between 1934 and 1940, 207 students were admitted with social science used to satisfy the (*f*) requirement. Their achievement in the University was poor—111 made first semester records below a "C" average.

A conclusion unfavorable to social science may be questioned because the students admitted under this exception had not planned a program to this effect, but were admitted after it had been seen that they had no other means of

* 1946–1950.

## TABLE II

COMPARATIVE SCHOLARSHIP IN INSTITUTION PREVIOUSLY ATTENDED AND FIRST SEMESTER IN THE UNIVERSITY OF CALIFORNIA, 1948 THROUGH 1952 (FRESHMEN), BERKELEY

| Admission Classification | Number | Median GPA in (a)–(f) subjects completed in H.S. | Median GPA in U.C. | Differential at the Median | Correlation* | Percent below "C" average in U.C. | Percent at 1.8 and higher in U.C. | Percent at 2.1 and lower in H.S. | U.C. GPA (Median) of group with low scholarship in H.S. | Percent at 2.7 and higher in H.S. | U.C. GPA (Median) of group with high scholarship in H.S. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| California—Met Requirements (a) to (f) | 6,055 | 2.40 | 1.39 | —1.01 | .50 | 22.99 | 28.47 | 30.25 | 1.11 | 25.93 | 1.96 |
| Highest 10th of Graduating Class | 61 | 2.31 | 1.26 | —1.05 | | 27.87 | 14.75 | 40.98 | 1.04 | 22.93 | 1.40 |
| 15a A's and B's (12a A's and B's in last 3 years) | 270 | 2.21 | 1.22 | —0.99 | .40 | 35.92 | 19.63 | 48.89 | 1.02 | 14.07 | 1.86 |
| 6a A's and B's in Advanced Academic Subjects in last 2 years | 51 | 1.94 | 1.05 | —0.89 | | 47.06 | 17.65 | 88.23 | 0.96 | (no cases) | |
| Principal's Recommendation | 133 | 1.91 | 0.95 | —0.96 | .13 | 52.63 | 4.51 | 98.50 | 0.94 | (no cases) | |
| Special Action of Director of Admissions | 229 | 1.96 | 1.06 | —0.90 | .20 | 44.10 | 11.35 | 82.97 | 1.04 | 1.31 | 1.10 |
| Social Science for Requirement (f) (Experimental) Berkeley and Glendale H.S. | 24 | 2.08 | 1.00 | —1.08 | | 50.00 | (no cases) | 87.50 | 0.95 | (no cases) | |
| Out-of-State (Bona fide Residents) Admitted under Regular Rules | 277 | 2.34 | 1.39 | —0.95 | .31 | 27.80 | 28.52 | 36.46 | 1.20 | 20.94 | 1.86 |
| Out-of-State H.S. and Aptitude Test | 126 | 2.58 | 1.58 | —1.00 | .36 | 15.87 | 42.06 | 11.11 | 1.85 | 38.10 | 2.02 |
| Specials | 88 | 1.90 | 1.24 | —0.66 | | 32.95 | 21.59 | 77.27 | 1.27 | 3.41 | 1.30 |

* Correlation Coefficients were not figured for less than 100 cases.

## TABLE III

STUDY OF CASES ADMITTED BY METHOD NUMBER 3 (15[a] A AND B) SEPTEMBER 1946–FEBRUARY 1950 (INCLUSIVE), BERKELEY

| | Number | N below "C" average first semester at U.C. | Percent below "C" average | G.P.A. in University |
|---|---|---|---|---|
| *Subject Shortages* | | | | |
| *a*) U.S. History and Civics | 3 | 0 | 0 | 1.89 |
| *b*) English | 12[a] | 2 | 17 | 1.73 |
| *c*) Algebra and Geometry | 19[b] | 5 | 26 | 1.44 |
| *d*) Laboratory Science | 35[c] | 7 | 20 | 1.40 |
| *e*) Foreign Language | 84[d] | 20 | 24 | 1.51 |
| *f*) Advanced Course | 97[e] | 26 | 27 | 1.34 |
| *Scholarship Shortage* (Below a "B" average on whatever *a* to *f* subjects were completed) | 82 | 37 | 45 | 1.06 |

[a] Five had other subject shortages.
[b] Eight had other subject shortages.
[c] Ten had other subject shortages.
[d] Seventeen had other subject shortages.
[e] Twenty-two had other subject shortages.

satisfying the (*f*) requirement. Still further to test social science for the (*f*) requirement, the University has two experiments under way with Berkeley High School and George Washington High School of San Francisco. The experiment is just starting in George Washington High School so no students have been received from that school, but from Berkeley High School 24 students have been admitted with a median grade point average in high school of 2.08. These students achieved a median grade point average in the University of California at the end of one semester of 1.00, a differential of —1.08 as compared with a scholastic average for all Berkeley High School transfers of 1.63 and a differential of —0.69.*

The degree to which scholarship in particular subjects is more or less important than scholarship in other subjects cannot be conclusively shown from our present statistical studies, because we have never admitted enough students with extensive deviations from the (*a*) to (*f*) pattern to be statistically significant. I believe, however, that grades in subjects in which there is a high degree of scholastic competition are a better measure of future academic success than are grades in subjects in which scholastic competition for grades is easy. A high degree of scholastic competition tends to be found in academic type subjects in which a high percentage of good students are registered, and especially in advanced classes of an academic type which have as prerequisites successful completion of elementary courses. It is possible that such competition may be found in other classes, such as stenography or bookkeeping, but it is not probable that classes in mechanical arts, homemaking, vocational agriculture, etc., will provide a sufficiently strong degree of scholastic competition for grades to serve as a valid basis for selective admission to the University. Few studies of this particular problem have been made, as far as I can find; many studies seem to indicate that mere pattern of subjects is not significant, although some of these studies are open to the criticism that the variations in the programs studied were not great enough to create significant differences in preparation. Aig-

* 1946–1950.

TABLE IV

STUDY OF CASES ADMITTED BY VARIANT METHODS (2–8)* SEPTEMBER 1946–FEBRUARY 1950 (INCLUSIVE), BERKELEY

| | Number | N below "C" average first semester at U.C. | Percent below "C" average | G.P.A. in University |
|---|---|---|---|---|
| *Subject Shortages* | | | | |
| *a*) U.S. History and Civics | 7[a] | 1 | 14.28 | 1.63 |
| *b*) English | 20[b] | 2 | 10.00 | 1.60 |
| *c*) Algebra and Geometry | 34[c] | 10 | 29.41 | 1.45 |
| *d*) Laboratory Science | 50[d] | 9 | 18.00 | 1.37 |
| *e*) Foreign Language | 134[e] | 28 | 20.89 | 1.46 |
| *f*) Advanced Course | 112[f] | 32 | 28.57 | 1.34 |
| *Scholarship Shortage* (Below a "B" average on whatever *a* to *f* subjects were completed) | 427 | 208 | 48.94 | 1.01 |

* Method 2—Upper 10 percent.
Method 3—15% A's and B's.
Method 4—6% A's and B's in advanced subjects.
Method 6—Principal's recommendation.
Method 8—Miscellaneous.
[a] One had other subject shortages.
[b] Six had other subject shortages.
[c] Fifteen had other subject shortages.
[d] Fourteen had other subject shortages.
[e] Twenty-nine had other subject shortages.
[f] Thirty-three had other subject shortages.

ner* in 1941 did study the importance of grades in particular subjects from the viewpoint of comparative scholarship in the first semester at U.C.L.A. of students transferring from Fairfax High School of Los Angeles. As a result of reading Aigner's report, the University Admissions Office made a somewhat less intensive study of the records of approximately 500 transfers from Berkeley High School. A summary of the coefficients of correlation appears in Table V.

One must be careful not to draw hard and fast conclusions on the basis of these two studies. Generally, however, both studies tend to bear out the contention that grades received in the (*a*) to (*f*) subjects are of greater prognostic value than grades received in other subjects. Generally, also, foreign language and, to a less degree, mathematics justify themselves as entrance subjects from the viewpoint of the first test of a subject requirement—is it a valid selective device. It may be hoped that other studies testing this thesis will be made by some of the larger high schools of California.

The second of the criteria for testing the validity of entrance requirements—whether the student has studied what is necessary to make him ready to continue with advanced study—takes us out of the field of statistics and into the field of opinion and theory.

As an approach to an analysis of the necessary educational experiences and growth that I would consider essential in the four years of high school, let me point out that the University has an educational level to which it hopes its students may arrive after four years of study under its guidance. It is essential, therefore, that certain basic information, training, skills, and mental alertness be at the high-school graduate's command.

There are certainly two aspects of the educational maturity of freshman entrants which should be emphasized.

* Herbert L. Aigner, *The Relation Between Pupils' Records in High School and Success in the Freshman Year of College*, M.A. Thesis, U.C.L.A., 1941.

One of these involves subject matter or information, and the other is concerned with method of thinking—how to utilize the sources of information and how to think logically in an elementary way. These two basic elements are not independent. Resourcefulness in analysis is dependent upon training and the availability of factual information. The selection of courses of study for the prospective college student should be made from this dual point of view.

Advanced study in the University, particularly in the Colleges of Letters and Science, requires elementary information in a wide range of academic subjects. Not all of such information is strictly of a prerequisite nature but is rather a determinant educational level. Without an adequate bacground of information, an individual student fails to get the greatest possible benefit from his University experiences. Successful study of our minimum requirements also helps to develop an extensive vocabulary, ability to read fast and intelligently, and to express oneself in clear and concise English, both in written and oral form.

While the high-school student is building a background of information, it is equally important that he have training in elementary analytic thinking. Many students get only a faint appreciation of what this means, because the conventional test of educational achievement involves primarily a recital from memory of statements of facts. Some of the (*a*) to (*f*) subjects have greater potentiality than others as training material in developing consciousness of thinking processes. Chemistry and physics are most suitable for this purpose, with geometry and other

TABLE V

CORRELATION OF GRADES RECEIVED IN INDIVIDUAL SUBJECTS AND GROUPS OF SUBJECTS AT FAIRFAX HIGH SCHOOL WITH GENERAL G.P.A. ACHIEVED AT UCLA, AND AT BERKELEY HIGH SCHOOL WITH GENERAL G.P.A. AT THE UNIVERSITY OF CALIFORNIA, BERKELEY

| | Fairfax | Berkeley |
|---|---|---|
| Total High School G.P.A. (*a*) to (*f*) subjects | 0.58 | 0.55 |
| Number of High School Units | 0.097 | .... |
| U.S. History | 0.41 | 0.35 |
| English | 0.41 | 0.24 |
| Algebra and Geometry | 0.33 | .... |
| Algebra | | 0.27 |
| Geometry | | 0.38 |
| Laboratory Science | 0.41 | 0.35 |
| Chemistry | 0.45 | 0.54 |
| Physics | 0.44 | 0.43 |
| Physiology | 0.30 | |
| Biology | | 0.02 |
| First two years of Foreign Language | 0.43 | 0.33 |
| French | 0.47 | 0.26 |
| Latin | 0.21 | 0.54 |
| German | 0.24 | 0.40 |
| Spanish | 0.41 | 0.17 |
| (*f*) Requirement | 0.40 | 0.42 |
| Science | | 0.51 |
| Mathematics | | 0.33 |
| Foreign Language | | 0.48 |
| Fine Arts | 0.15 | 0.18 |
| Practical Arts (typing, shop, etc.) | 0.27 | 0.22 |
| Number of Elective Units | 0.12 | .... |
| G.P.A. in Elective Units | 0.46 | 0.42* |
| Merit (behavior score) | 0.12 | .... |

* Electives include all courses not included in any of the other classifications. The number and distribution of semester grades are as follows: History, 227; Other social science, 405; Science, 770; English, Speech, etc., 395; Mathematics, 522; Foreign Language, 611.

courses in mathematics also of considerable value.

We come now to the third criterion — University entrance requirements should permit a reasonable degree of freedom in the high school. No part of a required entrance pattern can be considered by itself, without reference to other subjects—if a subject is required, it necessarily displaces other subjects in the student's high-school program, and so each required subject must be considered from the viewpoint of the comparative value of other subjects. Here we work in two directions, some of us chiseling away at the pattern by saying this is of little value, that is of little value, and so by attrition, doing away with the very heart of a pattern from both the "selective" viewpoint and the "educational level" viewpoint, others of us adding to the pattern by saying this is necessary, that is good, and so by accretion, building up the pattern of requirements to the point where the high-school student has no freedom of choice at all.

University entrance requirements compete for the time of the high-school student with Legislative, State Board of Education, and local School Board requirements for graduation from high school, with general education courses and with special interest courses. In justice to the acknowledged responsibilities of the high school in other fields, how much of the high-school program should be allotted to University entrance requirements? In the first place, let me say that the needs of the college preparatory student are fully as important as the needs of other students, even though he is in most schools a member of a "minority group." The mere fact that there are larger numbers of nonuniversity students in high school than there are University preparatory students should not be used to imply that the high school has less responsibility for one group than for the other. Next it is important to point out that United States History and Civics and competence in reading and in English expression are general requirements imposed on all students by the State Board of Education. What is asked for the University student in the (*a*) to (*f*) pattern is specialized mathematics (algebra and geometry), laboratory science and foreign language, together with a sequence in one of these three fields. If we subscribe to the doctrine of meeting individual needs, surely this does not seem an undue interference with either the high-school program or desirable freedom of choice on the part of the student. However, when one adds to this program several prerequisites or "recommended courses," a different situation may arise. The entrance requirement plus prerequisite program for any college or major should normally be limited to approximately ten units.

The argument has frequently been made by high-school principals that the requirement of a specific pattern results in some students going into college preparatory courses even though they are quite unfit for that type of study. Two reasons are advanced for this undesirable subject choice, first that college preparatory subjects have a superior social standing and second, that parental or student ambition is higher than the individual's academic ability. To my mind this argument against a required pattern has little or no validity. It is no kindness to a student of any age to permit him to live in a dream world in relation to his vocational objective. If he or his parents think that he should be an engineer, he should be required immediately to pit himself against the other students with similar plans. If he fails to compete successfully then he is more likely to be open to good vocational counseling than if he had not tried to compete. It is my own opinion that the strong position of vocational education in California high schools results in

great part from the "compulsory guidance" of University of California requirements of high grades in selected subjects. As for the superior social standing of the academic courses, one may have to admit the fact in some schools, but many of us have seen the reverse in other schools.

The trend in California since 1912 has been to depend more and more on the high-school principal as both the person who determines course content and who advises the individual student in high school. In 1909, the University required 15 units of approved courses; in 1912, three units of restricted electives, twelve units *tightly* prescribed; in 1915 three units unrestricted electives, two restricted, ten *tightly* prescribed; in 1933, five unrestricted, ten *loosely* prescribed. Approved by the Board of Admissions and Relations with Schools at their meeting on December 6, 1952, is an experimental plan, limited in duration to the years 1953–59, to increase still more the responsibility and freedom of the high school:

> University authorities believe that high-school students who follow the required pattern of subjects, together with the additional subjects recommended for particular majors, will be well prepared for work in the University. However, the University does not wish to exclude a student who has followed a program of University preparatory studies recommended to him by his high school, and will therefore admit an applicant on "B" average scholarship in a different program of University preparatory studies, provided such a program has been previously filed with and approved by the Board of Admissions and Relations with Schools.

Generally the high-school principals of California are as proud and as jealous of the scholastic standing of the University as is the University faculty itself, and few of the high-school principals would willingly see those scholastic standards lowered. Such a plan might solve the vexed problem of the liberty of the high school, without affecting adversely the quality of student admitted to the University.

# Admissions Programs of Independent Residential Colleges and Universities

By RIXFORD SNYDER

The distinguishing characteristics of independent colleges and universities must inevitably result in individual differences in admissions policies. But for those residential institutions that maintain high academic standards, there are certain common characteristics that set them apart from the public, tax-supported schools.

Most independent residential institutions select their students on the basis of three principal factors, used to determine the qualifications of applicants

**• The problems of admitting students to college are different in the private institution from those in public colleges and universities. The nature of these differences and the consequences in policy and practice are presented by Mr. Snyder in his article.**

**Rixford Snyder is Director of Admissions, Stanford University and Professor of History in the same institution. He is author of *British Tariff Policy, 1918–1923* and with George H. Knoles of *Readings in Western Civilization*. He received the degree of Ph.D. from Stanford in 1940.**

for college-level work. These are: (1) scholastic achievement as demonstrated by the preparatory school record; (2) aptitude for college work, generally measured by the Scholastic Aptitude Test of the College Entrance Examination Board; and (3) personal qualifications evidenced in principals' and teachers' recommendations as well as by contributions to school and community activities.

This generally accepted policy differs considerably from most public tax-supported institutions of comparable level. They generally differ widely in their scholastic requirements from independent schools, do not use the Scholastic Aptitude Test, nor any comparable aptitude measuring device, and do not consider as so important the personal qualifications in so far as activities and recommendations are concerned.

The differences in the academic requirements are striking, including both curriculum and performance. The University of California, for example, requires that the candidates for admission have in their academic record an extensive list of prescribed courses in the high-school years with, of course, satisfactory grades in each. Most independent institutions, however, are less interested in such prescribed curricula than they are in the quality of work in a college preparatory course of the particular high school's own choosing. As a consequence, relatively few independent schools insist on particular courses, with the important exception of English, but most such institutions require higher performance in the candidate's chosen fields of study than do public universities and colleges.

The practical result is that, in keeping with the prescribed function of the public, tax-supported university, it is easier for the candidate to secure admission. That is not to say that the academic standards of such institutions are not as high, or even higher, than many private colleges or universities. The scholastic records of the University of California, for example, demonstrate that it is not easy to remain in attendance once admission is gained.

A further significant difference between public and independent institutions is to be found in enrollment figures. The latter are usually schools of limited enrollment, either by specific intent or by the limitation of academic and residential facilities. The former, on the other hand, are usually required by law to admit every candidate who meets the minimum requirements. This is far from being the case with the independent schools.

A candidate seeking admission to an independent college or university may meet all of the minimum requirements in so far as academic record, aptitude for college-level work, and personal qualifications are concerned and still not be admitted. The reason for this is that the institution concerned will generally have many more qualified applicants than it can handle. Therefore, admission even to qualified candidates is competitive, with a sizable percentage of these being denied entrance, while only those with the highest qualifications gain admission.

When admission is competitive, the quality of the candidate and his record become extremely important. This is the fundamental reason why so much weight is given to the results of the aptitude tests and to the recommendations submitted by the candidate's teachers and principal. With these two factors, in addition to the academic record, the admission committee of an independent institution has a great deal more data on which to base its selections. It is better able to predict success or failure on the part of the candidate, although like the political pollsters, admissions committees are far from being infallible. As a result, the rate of disqualification for scholastic or other reasons is gen-

erally lower than in public institutions of comparable standing.

For independent residential colleges and universities, the question of personal qualifications is an important one. A major proportion of the students at such institutions live in assigned accommodations in dormitories or other residences owned or supervised by the school. It is important that, so far as possible, disruptive or "problem" individuals be avoided so that there will be a minimum of serious friction. This is very important because at schools of this character almost all the student's life, with the exception of vacations, is spent on the campus participating in the academic, cultural, social, and athletic activities. Members of the student body must, therefore, get on well together. It is not strange, then, that in selecting an individual student, an independent institution will seldom require a definite pattern of academic subjects in his background, but will consider other, more personal things as of greater importance.

The administrations of most independent residential institutions think that one of their paramount aims is the training of leaders in all fields of endeavor. Much can be done in achieving this aim because of the individualized type of faculty-student relationship that is common in such schools. But, because of this goal, it becomes all the more important that the raw material be of high quality. Therefore, these institutions are continuing to insist upon rigorous admission standards as well as high levels of actual performance.

Independent colleges and universities are in an excellent position to carry out their assumed function of training leaders. If their financial situations are far more difficult than their sister institutions that are tax supported, the strings attached to them and the bonds that restrain their liberty are less chafing. With smaller and more highly selective student bodies, and with a lower teacher-student ratio, they have a critically important role in the education of American youth.

In keeping with this role of training leaders, it is probable, indeed it is already apparent, that the selective standards for admission to independent colleges and universities are becoming higher rather than lower. Population pressure alone would produce this trend, but it is also true that these institutions are continually striving to improve their product. This trend is fully in keeping with the obligation that independent schools owe a free American society.

In meeting this obligation the independent college or university must continue to operate on the thesis that individual development and education at the college level can best be accomplished through a program of careful selection of students from the preparatory school.

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## ADULT EDUCATION TAKES NEW DIRECTION

Fastest growing aspect of education is adult education. It begins to realize its potential as it moves from easy areas of teaching "how" to more difficult ones of "why." Adult educators are experimenting in formerly neglected areas: human relationships, public affairs, economics, government, social and world affairs. Methods now emphasize emotional as well as intellectual elements in teaching and learning. So writes President-elect Paul H. Durrie of Adult Education Association.

—Education Summary,
November 20, 1952

# The California State Colleges in Public Higher Education

By ALFRED E. WHITE

• **The state colleges of California are occupying an increasingly important place in the system of higher education in the state. Their admissions policies affect large numbers of high-school graduates each year. Dr. White presents a clear picture of the system of higher education in California and of the admissions policies of the state colleges.**

**Dr. White is Admissions Officer, San Diego State College. Earlier, he served for fifteen years as a secondary-school teacher and administrator in the public schools of California, and for five years as a collegiate registrar. He received the degree of Ed.D. from Stanford University in 1941.**

The state colleges of California, together with the State University, the public junior colleges, and the California Maritime Academy, form the system of public higher education in California. Under this system, public education on the college level is available to anyone who desires it and is capable of profiting by it.

To meet the varying educational and occupational needs of the students in the state, each of the four types of institutions is designed to serve a distinct purpose. The California Maritime Academy is highly vocational in nature. Each of the other three types of institutions, in addition to their more specific individual functions, shares common functions and objectives. The high-school graduate, or the student transferring from an institution of collegiate grade, is enabled to select the college or university of his choice in terms of his educational or occupational goal, his previous preparation, and his personal qualifications.

Admission requirements for each type of institution vary in relation to the curricular offerings and objectives. Admission to all institutions, other than to the junior colleges, is on a selective basis; however, a student failing to gain admission to one of these colleges or the University is not denied the opportunity for higher education. The public junior colleges admit high-school graduates without respect to previous high-school scholastic records. In these junior colleges, opportunity is afforded a student to remove matriculation deficiencies to other colleges while at the same time pursuing work in college courses.

The location of these institutions of higher learning may be a factor in a student's choice of colleges. The University has several campuses, located in both the northern and southern parts of the state; the junior colleges are widely dispersed throughout all areas; while the state colleges, of which there are ten, serve most of the sections of the state. The California Maritime Academy is located in Carquinez Straits, Vallejo. The student will find one or more types of these collegiate institutions in or near his home locality. His problem is to select his college with respect to his educational or occupational objective, his qualifications for admission, and the location of the institution.

The fields of professional training, advanced work on the graduate level, and research are distinct functions of the University. Preparation for this level of education and training may be obtained in the undergraduate division of the University, in the state colleges, or in the first two years of the junior colleges.

The junior colleges are two-year institutions offering programs leading to the degree of Associate in Arts. They are regional in character, with broad functions, including the opportunity for orientation and guidance, general edu-

cation, training in terminal curriculums, and instruction in lower division courses paralleling those of the state colleges or the University.

The California Maritime Academy trains for commissions in the Merchant Marine and the Naval Reserve. Graduates receive a Bachelor of Science degree in nautical sciences.

The state colleges offer four-year programs leading to the baccalaureate and a graduate year leading to a Master's degree and to credentials for teaching. These colleges are the state colleges of Chico, Fresno, Humboldt, Long Beach, Los Angeles, San Diego, Sacramento, San Francisco, San Jose, and the California State Polytechnic College at San Luis Obispo. They have several general functions common to all. Additional responsibility is given to a few of the colleges for certain specific functions.

All the state colleges are charged with the responsibility of providing for teacher education; occupational training in fields such as business, industry, public service, homemaking, and social service; preprofessional curriculums leading to advanced professional study; liberal and general education; and education for responsible citizenship. Specific responsibility is given to the California Polytechnic College for programs in agriculture, mechanics, engineering, business methods, domestic economy, and other such branches as will fit the student for nonprofessional occupations. The Los Angeles State College of Applied Arts and Sciences is designated responsibility for serving the needs of the community in training for occupations in arts and sciences as related to business and industry. Two-year programs on the junior-college level are authorized for Chico State College and Humboldt State College to enable them to serve the needs of their areas in this type of education. Fresno State College and the California Polytechnic College also offer programs of less than four years in certain occupational fields, such as agriculture. Three of the newer state colleges, Long Beach, Sacramento, and Los Angeles, are authorized to operate currently as upper-division colleges only.

All of the colleges offer programs of counseling and guidance through orientation and personnel services. Professionally qualified counselors are available to render assistance to students in problems of an educational, vocational, or personal nature. These services generally are not available until after the student has been admitted to the college.

Minimum requirements for admission to freshman standing in the state colleges are high-school graduation and ten semester courses (five Carnegie units) of A or B grade on a five-point scale, earned during the last three years in high school, or the attainment of the twentieth percentile on a national norm of a standard college aptitude test. An adult who is not a high-school graduate may be admitted if he demonstrates to the college admission authorities, in such manner as they may determine, his ability to profit by college work.

A student applying for admission to a state college who has completed work at another accredited degree-granting college or university may be admitted if he has attained at least a C average for all work previously attempted and receives an honorable dismissal from the college last attended. Exceptions may be made for a student, who, in the opinion of the college admission authorities, shows promise of succeeding in the college program if admitted. A student transferring from an unaccredited institution may be admitted on similar qualifications, but graduation credit for transfer work is withheld until he has earned 24 units of C grade, or better, in courses at the state college to which he has transferred.

Admission to the state colleges which offer only the last two years of a four-

year course requires the substantial completion of two years of college work at another institution and the necessary scholastic qualifications required of all transfer students.

The junior-college student who was not eligible for admission with freshman standing to a state college must have completed at least 24 units of college work with a grade average of C, or better, for all work attempted before admission may be granted. Not more than 64 units of work earned in a junior college may be accepted for transfer to a state college.

Graduate standing may be granted in a state college if the student has an acceptable four-year Bachelor's degree from an accredited institution and meets such scholastic and professional standards as may be prescribed by the college. Students not fully meeting these requirements may be required to complete additional college work of a specified nature before graduate standing may be granted.

The California state colleges occupy an important and essential part of the pattern of public higher education in the state. They stand between the junior colleges with their two-year curriculums on the one hand, and the University with its professional and graduate programs on the other. The state colleges provide four-year occupational curriculums in many fields and at the same time share with the University and with the junior colleges common functions in preprofessional training and undergraduate work leading to advanced study. The location of these state colleges in many parts of the state affords an opportunity for a student to obtain all or part of his college education near his home. The cost of tuition is low; the requirements for admission are moderate; the quality of education is high. These institutions have been responsive to the demands in their areas, resulting in expanding curriculums as needs are recognized. They promise to continue to be the people's colleges serving the state and their communities.

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## GOOD SCIENCE CLASSROOMS

Teachers' plans for science rooms have provided Los Angeles schools with the last word in classroom environment. Science teachers, supervisors, and administrators co-operatively worked out designs for three basic science rooms: one for chemistry, one for physics and physical science, and one for life science and physiology. Because so many requests come in, detailed requirements for each basic type have been presented in October's *Clearing House*. They give full information on location, size, lighting, floors, chalk boards, electrical outlets, furnishings, storerooms.

—Education Summary,
November 20, 1952

# Admission Practices in Relation to Junior-College Education

By BASIL H. PETERSON

**• The junior colleges occupy a central place in the college admission picture in California. They serve as a college in relation to the high school whose students they admit, and as a preparatory school for the four-year colleges and universities. Their importance in the latter role is noted in the fact that "twice as many students now enter the State University with advanced standing as enter directly from high school. Most of these advanced students come by way of junior colleges." Dr. Peterson from his position of leadership in junior-college affairs presents a comprehensive analysis of the problem of college admission requirements.**

**Dr. Peterson is President and District Superintendent, Orange Coast College, Costa Mesa, California. He has held positions as Director of Glendale College, Assistant to the Dean of the University of California College of Agriculture, and Principal of Mt. Shasta High School. He was for four years, 1944–48, President of the California Junior College Association, and served in 1952–53 as President of the American Association of Junior Colleges. Dr. Peterson received the degree of Ph.D. from the University of California, Berkeley, in 1936.**

Strait is the gate and narrow is the way which leadeth unto life and few there be that find it."* The philosophy of many institutions of higher learning relative to admission of students parallels this passage of Scripture. However, this is not true for public junior colleges in California.

Mrs. James Randolph stood in the admissions office of Hanford Junior College with her daughter, Joanne. Rather relieved and somewhat pleased she exclaimed, "I'm so happy that Joanne will be admitted to your college. I was afraid that her failure in high school to complete algebra and geometry would prohibit her from entering college."

As a matter of fact, other institutions of higher learning besides junior colleges would have admitted Joanne. However, none are more democratic than California junior colleges when it comes to admission requirements. The junior college is really a community institution because it will admit the children of all the people—and their parents as well.

The admission requirements of public junior colleges in California are fixed in the State Education Code, Section 8821, which reads as follows: "The principal of any two-year junior college *shall* admit to the junior college any high-school graduate and any other person over 18 years of age who in his judgment is capable of profiting from the instruction offered."

This means that all high-school graduates regardless of pattern of courses completed or grades earned are eligible for admission to a junior college. It also means that any non-high-school graduate who gives evidence of sufficient maturity and seriousness of purpose may be admitted. Therefore, very few are actually denied admission to a public junior college in California.

The liberality of admission requirements in California makes the task of the junior college an unusual challenge. Students are accepted at all levels of achievement, and with any pattern of previous training; the college must assist each one to rise to higher planes of accomplishment.

In order to function effectively in such a role the junior college must do a superior job of teaching. Instructors must be flexible in order to gear their teaching to a most heterogeneous group of students, they must be ingenious in

* St. Matthew 7:14.

methods and procedures, and they must be sympathetic and understanding. To be effective in its functioning a junior college must also have a broad program of instructional offerings. It must offer courses leading to professional advanced study, and courses in semiprofessional and vocational fields; it must provide basic education for all students. Classes must be made available both during the day and the evening.

Without an adequate program of guidance and counseling a junior college cannot do its job effectively. With a heterogeneous student body and with many programs of instruction designed to meet their diverse needs, much care, time and insight are necessary in advising with students. As the counseling service of a junior college functions, the success of the institution may be measured.

One year later the aforementioned Mrs. Randolph appeared in the counseling office at Hanford Junior College. Again she was seemingly pleased as she said, "It is certainly fortunate that Joanne has high enough grades to transfer to the university. I have been hoping all year that she would make it." It seemed that Joanne had completed in one year the minimum requirement for admission to the university of her choice. Because it was the absolute minimum, and because Joanne was not a strong academic student, the junior-college counselor recommended strongly that transfer to the university be delayed. Mrs. Randolph would not hear of such a thing and so Joanne entered the university, as a rather weak student. Later on we will find out how she fared.

Admission practices of senior colleges and universities are of definite concern to California junior colleges. One of the major functions of a junior college is to provide a program of instruction which will lead to transfer to a senior college or university. In fact, twice as many students now enter the State University with advanced standing as enter directly from high schools. Most of these advanced students come by way of junior colleges.

Admission practices of senior colleges and universities are of major concern to junior colleges for the following reasons:

1. Junior colleges must offer courses which will provide opportunity to remove high-school shortages.
2. Junior colleges must offer a lower division pattern of instruction which will qualify for admission to senior institutions. This is essential for not one university but for many, and in numerous major fields.
3. Junior colleges must offer a standard of instruction that will qualify students to succeed academically after transfer.

In fulfilling its transfer function, the junior college has a tremendous challenge. The success of any junior college in this regard depends upon how well it gears its scholastic standards to the admission requirements of senior colleges. Any student who transfers from a junior college to a senior institution and then fails scholastically faces a serious predicament. His future advancement in college is practically ended. It is, therefore, important that students admitted to senior colleges and universities with advanced standing have the background of training and ability to insure success. The problem is further complicated by the fact that senior colleges and universities have different standards of admission.

Prospective transfer students who are marginal cases in the sense that the bare minimum admission requirements have been met should be strongly advised to acquire a better foundation prior to entering a senior college. This means that the guidance and counseling system of a junior college is critically important. It also means that the senior colleges and universities have an obligation to discourage marginal students

when it appears that their chances of success are slim.

What happened to Joanne? At the end of the first semester in the university she was placed on scholastic probation and at the end of one year was dismissed for poor scholarship. However, she did accomplish something at the university. She acquired a husband. He was drafted and sent overseas, and so the next fall Joanne was back at Hanford Junior College. She no longer had to struggle with algebra, geometry, and foreign languages, but was enrolled in several courses that had some meaning for her. She was preparing to become a homemaker. She was studying home management, growth and development of children, fundamental psychology, and marriage and family living.

Some may say that the case of Joanne Randolph is an exception. Although the illustration may not be typical of the majority of transfer students, cases of similar type occur frequently enough that serious study should be given to the admission practices pertaining to transfer of students from junior colleges to senior institutions.

Only some of the specifics of admission practices involving junior-college education have been discussed above. However, in considering all implications of the problem, the following generalizations seem justified:

1. In view of present admission requirements to public junior colleges in California, such institutions need to guard against expanding vocational offerings too rapidly. A junior college must not spread itself so thin in trying to meet the needs of all that it is not possible to do a thorough job.

2. Junior colleges should establish and operate functional guidance and counseling services. Counselors and students must be realistic in discussing and selecting a lifework and a major field of study. Students need to be strongly discouraged from attempting to pursue the type of college instruction for which they are not qualified.

3. Senior colleges and universities should gear their admission requirements to the standards required for success after transfer.

4. Junior colleges should gear their scholastic standards in university transfer fields to admission requirements.

5. It would simplify the task for the junior colleges if the different senior institutions would establish admission patterns that are more nearly comparable, or would allow the junior colleges to define their own lower division programs and would accept said programs at full value for transfer purposes.

6. Senior college admission standards should be sufficiently high to prohibit transfer from junior college in less than two years of all students who have not demonstrated real scholastic superiority. This would mean that most institutions of higher learning should raise admission requirements for non-junior-college graduates.

7. If and when senior institutions state their admission standards so as to admit only those who give real promise of scholastic success professors in these higher centers of learning will have to revise their grading standards. If they continue to "fail" the same percentage of the more highly selected group of students, they will defeat the purpose of improved selective procedures.

8. At present, senior colleges tend to place increasing emphasis on high scholastic attainment, and less emphasis on the completion of specific course patterns, in selecting their students. This trend is a step in the right direction.

# School and College Relations Conference

By H. ORVILLE NORDBERG

• **In harmony with the recurring suggestion that college and secondary educators should work together more closely, Mills College sponsored a successful conference which emphasized the problems of college admission policies. The report of the conference prepared for the *Journal* by Orville Nordberg conveys the feeling of enthusiasm that has led the college to decide to sponsor another conference next year.**

**Dr. Nordberg is Chairman, Department of Education, and Director of Summer Session, Mills College. He has taught at Acalanes High School, Lafayette, California, San Diego city schools and California College of Arts and Crafts, Oakland. He has contributed other articles to the *Journal* in previous years. He received the degree of Ph.D. in secondary education in 1949 from the University of California.**

Believing that California secondary schools and colleges can solve many of their related problems through more cordial personal relationships, President Lynn White, Jr., of Mills College called its first School and College Relations Conference on October 4, 1952, on the Mills campus. More than one hundred high-school and college teachers and administrative officers accepted invitations to the conference, which was especially concerned with admissions policies of California colleges and universities and the implications for the liberal arts given rise by the several variant policies in force.

No one can work in a university or college admissions office without having definite feelings about some of the strays who come loping up for approval. And because feelings are facts, and decisions crucial to individual students and their secondary schools are determined daily by college admissions officers, it was agreed that an open airing of convictions should clarify issues. The conference was wholly successful in this respect.

When the National Survey of Secondary Education published its *Bulletin*, "Articulation of High School and College," in 1933, it was clear that the problem of articulation was not to be solved at the point of transition from the secondary school to the college. The roots of the problem ran deep into the educational policies and curricula of both educational institutions.

Accordingly, changing patterns in high-school curricula in the liberal arts were discussed first, at this conference, with Professor J. Cecil Parker of the University of California addressing the total group on the topic, "General Trends in Curricular Development in High School." Curricular development programs in specific schools were described by Samuel A. Pepper, principal of McClatchy Senior High School and Kenneth E. Money, curriculum coordinator of San Rafael High School.

Following coffee and conversation, participants listened to Professor Malcolm S. McLean of U.C.L.A. as he rapidly surveyed general trends in curricular development in colleges, with emphasis upon general education programs. President Arthur G. Coons described the enlightened curricular experimentations in the liberal arts at Occidental College and Dean A. R. Davis of the College of Letters and Science, University of California at Berkeley, presented a summation of the curricular offerings and educational philosophy at that institution.

That the morning's addresses stimulated thought and that the participants were eager to share opinions and exchange ideas was evident throughout the afternoon. In five lively sections, problems of school and college relations were cited, analyzed, and probed with volatile enthusiasm. The sections and their leaders were:

Admissions and Educational Continuity: Douglas V. McClane, Director of Admissions and Registrar, Whitman College.

Foreign Languages: Hortense Hackman, Teacher of French, Oakland High School.

Natural Sciences and Mathematics: Paul Hurd, Assistant Professor of Science Education, Stanford University.

English and Literature: Edith Bell, Curriculum Assistant, San Francisco Schools

Social Sciences: Reynold M. Wik, Professor of History and Government, Mills College.

As classroom teachers illustrated arguments with anecdotes and matched charge with countercharge, scholarship was leavened with laughter and, in several instances, ancient misunderstandings were overcome. But still the secondary schools in some instances insisted that reading and conversation were paramount in foreign language teaching while college instructors argued with equal fervor for the grammatical approach. The sequence of study from the twelfth year to the freshman college year occupied the attention of several participants as the differences in high-school preparation were emphasized both by college instructors and high-school representatives.

Smoothing the road between high-school and college curricula in the liberal arts has been something like trying to reconcile ego and oblivion. And while heartening progress has been achieved since 1933, as evidenced by the amiable attitudes of those who took part in this conference, there certainly are yet misapprehensions, inadequacies and deadly chunks of cold granite lying on the freeway between the secondary schools and institutions of higher learning.

Research and statistics can provide needed information. But if California's high schools and colleges together are more fully to meet the needs of youngsters and of society, the educators who make policy and see it exercised soon must meet again face to face. They will make progress when they talk without administrative restraint and when, in a congenial environment, the coffee is good and the wit is clear. Thereby both the high-school senior and the college freshman will be better served and better educated.

# Who IS the Big Bad Wolf?

**By HERNDON C. RAY**

**• The co-ordinator in the office of a county superintendent of schools has opportunity to know intimately the problems of the small high schools. Providing an adequate curriculum for both the college and the noncollege bound student often taxes the ingenuity of the principal and the faculty of the smaller high schools. Mr. Ray suggests that the task is not an impossible one, even within the present framework of college entrance requirements.**

**Herndon C. Ray is Secondary Co-ordinator, Stanislaus County Schools. He has taught for fifteen years in the elementary and secondary schools of California. He received the degree of M.A. in 1950 from College of the Pacific.**

The problem of college entrance requirements, unlike old soldiers, neither dies nor fades away. Despite all the arguments for and against the so-called "restrictions" placed upon California high schools by the University of California, the problem still exists.

In the beginning high-school accreditation for the entrance of students into the university was an arbitrary matter. There were certain regulations to be met, certain subjects to be passed with certain grades to be achieved. The student had to meet these requirements; the school had to provide the necessary opportunities for him to do so. In

those days, however, most students planned for a college career. Today the picture is not the same. The cry we hear is, "What about the other 80 percent?"

As secondary-school educators we are concerned with "the other 80 percent." College administrators are concerned with the remaining 20 percent. Is it possible for these points of view to meet? Can the high schools prepare their students adequately to meet life whether in an institution of higher learning or in economic endeavor immediately after graduation? Will the university accept its quota of those graduates that apply for admission if any "tinkering" takes place in the high-school curriculum? The answer is, "Yes."

Let us begin our thinking by rereading a few quotations from articles already published which deal with this "problem" of California high schools.

A good summary of fitness to do college work is expressed by Albert D. Graves in his article, "Another Look at College Admissions" (*California Journal of Secondary Education*, February 1946). He writes, "There is a great deal of evidence to indicate: (1) That success in the university or college is not dependent upon *what* pupils take in high school, *but how well they do* with what they take. (2) That success in the university or college can be predicted with considerable success by the use of aptitude tests, personal interviews, records of grade point averages in high school, and participation in high-school activities." (Italics mine.)

Dr. Hiram W. Edwards, writing on "Articulation of University and High School" (*California Journal of Secondary Education*, November 1937), states that: "The mere satisfying of admission requirements may not be sufficient to bring about easy and sufficient adjustment of the students to the new environment atmosphere, and peculiarities of the higher institution."

In the same article: "But for the high school to concern itself with actual time spent in study is not of itself sufficient. The accumulation of subject matter has value and is necessary in many ways, but too frequently have our secondary schools placed the emphasis on this factor alone. *Knowledge of the ways and means by which information is obtained is of far greater value.*" (Italics are mine.)

Again he writes: "When the student leaves the high school, if he is equipped with a knowledge of how to study and a willingness to spend his time to that end, his adjustment to the requirements of the higher institution will, in a large measure at least, be comparatively simple."

In a very able article in the *California Journal of Secondary Education* (January 1949), entitled "The Public High Schools and the University," Dr. Herman Spindt, Director of Admissions at the University of California, wrote, "The University at the present time makes no prescription of content in preparatory subjects. Names of courses are sometimes confusing, and high schools are, therefore, asked to designate the courses which in *their* opinion satisfy the subject requirements."

Further along in the same article, in speaking of the objections raised to admissions requirements, Dr. Spindt comments: "To meet in part these objections, a number of alternate methods of admission have been established, of which two have been the source of many and very good students for the University:

1. The highest 10 percent of a high-school graduating class may be admitted, if they have followed a 'substantial academic program.'

2. An applicant with 15 units of 'A' and 'B' grade, with a subject program including all but two of the 'a to f' pattern. The success of students who are admitted under these two alternate plans indicates that high scholarship is

more important to good scholarship in the University than exact conformity to the 'a to f' subject pattern."*

Finally, Dr. Spindt gives some evidences of "constructive tinkering" with the admissions policy. The fourth item he reports concerns us here. ". . . (4) For a five-year period (1949–1953) graduates of junior colleges who have completed with satisfactory grades the requirements for junior standing in a college or school of the University may be *admitted without reference to their high-school programs.*" (Italics mine.)

These quotations, then, must lead us to the obvious conclusion that high schools have the freedom to set up a program that will fit the needs of the students—all students—in any community in California. Let us summarize the points made in these quotations:

1. Subject matter alone is no insurance for good college work.
2. The ability to study and to find information effectively and efficiently is more valuable than accumulation of mere subject matter.
3. High scholarship is more conducive to good scholarship than "getting courses."
4. The patterns of admission are varied and do not depend upon specified courses alone.
5. The "a to f" pattern is not necessarily a college preparatory program.†

This summary, then, brings us to a review of the purposes of the high school today. While the ultimate goal of all students is the same, there are two paths to follow toward that goal—"College Preparatory" and "Terminal." The larger the high school the easier it is to define clearly these two paths through the course of study. The principal of the small high school, however, need not throw up his hands in despair because his task in this regard appears impossible of solution. *Any* school can meet the needs of high-school youth effectively without violating sound educational practices. The major need is the willingness to proceed along well-known but seldom tried lines.

Every student, whether college bound or off to work upon graduation, needs five things to compete successfully in his society. The school, thus meets these needs and fulfills its purpose when it:

1. Teaches the student how to read efficiently, rapidly, and with comprehension. Helps him to reach the highest level of which he is capable in this field.
2. Provides effective counsel and guidance in preparation for the student's choice of vocation. Provides herein ample opportunity for orientation and personal adjustment in social contacts.
3. Develops habits of study, promptness, responsibility, and willingness to do a job.
4. Exposes the student to experiences in the world's knowledge so that it has meaning and value to the student.
5. Makes provision for individual growth and initiative. Encourages the student to achieve through personal effort in fields of his choice and interest.

The solution of the problem of college entrance requirements involves a brief summation of basic human needs. To be able to get along well in life every person must be able to (*a*) reason correctly, (*b*) choose wisely, (*c*) read and write adequately, (*d*) react to social contacts through habits of good citizenship. To the extent to which a person is moved by these four things he succeeds in becoming a useful, well-rounded, adjusted individual—both within himself and in his relationship with his environment. The particular subjects in the course of study that will develop these desired

* The "a to f" subject pattern:
*a*) History—1 unit.
*b*) English—3 units.
*c*) Mathematics—2 units.
*d*) Science—1 unit.
*e*) Foreign Language—2 units.
*f*) Advanced course chosen from laboratory science, mathematics, or foreign language—1 (or 2) units.

† See: *Required Courses and Other Required Instruction in California Public High Schools,* California State Department of Education, Bulletin No. 6, Vol. XX, pp. 3–5.

traits and tools of living are not so easily defined. There have been many, and continued, attempts to show that this or that subject will bring about these desired ends. All of these attempts have proven to be without foundation in fact. They persist, however, and much counseling in school is based on these theories. There are theories *and* theories in this regard. We do know, however, that these habits and traits can be and must be taught in all subjects and every classroom of the school. Their teaching, regardless of the subject matter encasing them, is essential to scholarship, economic security, and social well-being.

The next step in the quest for a solution to the college entrance problem is a thorough-going re-evaluation of the high-school course of study. We have talked about such a step for generations of students without making any real progress. This step is essential to the solution of the problem of meeting the needs of those who attend our high schools. It is essential that secondary-school educators discover defensible answers to how and why *all* subjects and subject matter within the subjects are being offered in the schools. Objectives of courses and techniques of presentation must be able to stand before careful scrutiny and to be evaluated according to whether they fit the needs of the students or the whims of the teachers. What cannot be made to fit the requirements listed above must be discarded. What is valuable must be reinforced and strengthened.

The third step is to make a serious effort to provide ways whereby all students may be allowed to work successfully to capacity through a differentiation of the material to be studied. Education, by the very nature of the person, must be an individual matter. It cannot be mass produced. The great burden placed upon the teacher today is the knowing how to present material so that each student in the class will be able to compete successfully and learn ways to meet the problems of his life.

The three steps outlined above need not be accompanied by fanfare and "revolutionary tactics." Reorganization, re-evaluation, and improvement of techniques ought, of necessity and by nature of the problem, to be done by means of careful study, thorough planning, study of community needs, and in terms of meeting the demands of life upon the individual today. A program of study for the purpose of coming nearer to meeting these demands will solve the problems of providing useful, interesting, and vital education for all students without any obvious change in the makeup of the school.

The high-school administrator seriously concerned with giving the greatest opportunity for education to all students will see the possibility this program offers. Within his own faculty he will be able to bring about, over a period of years, a complete reorganization of his school. The school will appear to be the same. Within the classes, however, "minimum essentials," "preparation for college," "interest levels," "retardation," "noncollege students" will all have a vital place. The top 10 percent will be adequately prepared to meet the demands of college study. The other 90 percent will have the tools necessary to make successful adjustments in their vocations. The only problem remaining is to find those who are willing to make the necessary steps.

# What Problems Face Activity Sponsors?

By ELLSWORTH TOMPKINS AND FREDERIC T. SHIPP

To obtain information as to whether there is a pattern to the problems that confront sponsors and coaches of extra-class activities, 44 members of a class in Administering High School Activities conducted an inventory of their sponsorship problems during the 1952 Summer Session at San Francisco State College.* The findings indicate that a pattern does tend to exist but that it varies somewhat according to type of activity. As might be expected, considerable difference in problems listed appears between athletic and non-athletic activities. In several types of nonathletic activity less of a difference is noted.

The 44 class members were sponsors of a total of 86 activity groups, classified as follows:

*Service Activities—total, 21.*
Student council (7), school paper, (2), traffic squad (3), stagecraft (2), audio-visual aids, girls' league, service awards group, assembly planning, monitors, rag drive, and annual book.

*Departmental, Hobby, Music, and Social Clubs—total, 27.*
Junior Red Cross (2), social dance (2), glee (2), science (2), block letter (2), rocks and minerals, drama, chorus, Hi-Y, movie, stamp, orchestra, farm, Italian, roller skating, sea scouts, conservation, airplane, world affairs, ski, harmonica, and folk dance.

*Intramurals—total, 13.*
All intramurals (6), girls' volleyball, softball, baseball, touch football, badminton, girls' athletics, spelling bee.

*Interscholastic Athletics—total, 19.*
Basketball (7), baseball (5), football (4), track (2), tumbling.

*Class Organizations—total, 4.*
Senior class (3), junior class.

*Contests and Prizes* (2). (Outside-sponsored contests involving voluntary participation.)

A total of 199 problems is listed in the inventory. Many of these are classifiable; a considerable number resist classification. Some of the problems relate to internal management and organization, that is, they arise within the group and concern relationship between sponsor and club or team members. Other problems affect the relationship between the sponsor and the administration or between the group and the whole student body. For convenient listing, therefore, all problems are listed under *internal* or *external* to indicate whether they arise within or outside the group.

As space does not permit a detailed account of the 199 problems, a consensus of most frequent problems classified in relation to type of activity is here presented, in order of priority.

## Findings of the Problem Inventory

With two exceptions the sponsors participating in this inventory represent teaching and supervisory staff in schools located within 50 miles of the

**• In this article two leaders in secondary education turn their attention to one facet of the increasingly important extracurricular program. Those who sponsor student activities will be able, in reading this article, to compare their experiences with those of others who are engaged in similar work elsewhere.**

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* The authors wish to acknowledge the enthusiastic co-operation of the graduate students in Ed. 284.1, who supplied the data.

San Francisco Bay Area. As no attempt at sampling all activity sponsors in the area was made, the findings can hardly be regarded as statistically valid. Nevertheless, as the sponsors contributing to the study are in most cases mature and experienced teachers, their listing of problems was considered thoughtfully. To this extent, the findings can serve as an indication of the type of problems activity sponsors face in Northern California. Following is a brief interpretation of the findings:

1. Sponsor problems relating to *internal* organization of extraclass activities are almost equal in number to those relating to *external* problems, but the latter appear to involve greater homogeneity. Ninety-five of the total of 199 specified problems are classified as internal, yet according to type of problem the count is 22 internal to 30 external.

## CONSENSUS OF PROBLEMS INDICATED BY 44 SPONSORS OF HIGH-SCHOOL ACTIVITIES

### *Service-Type Activities*

| INTERNAL | EXTERNAL |
|---|---|
| 1. Developing and maintaining pupil interest. | 1. Obtaining faculty support of and interest in extraclass activities. |
| 2. Encouraging wide participation by members. | 2. Obtaining administrative backing of extraclass activities, projects, and procedures. |
| | 3. Gaining the co-operation and support of the student body. |

### *Departmental, Hobby, Music, Social Clubs*

| | |
|---|---|
| 1. Developing and maintaining pupil interest. | 1. Restrictions of schedule, inadequate time for meetings and rehearsal. |
| 2. Restrictions of time to do the job well. | 2. Transportation difficulties. |
| 3. Too large a group to achieve best results. | 3. Lack of faculty support. |
| 4. Lack of faculty co-operation with the activity. | 4. Insufficient funds. |
| 5. Lack of Administrative support of the activity. | 5. Overparticipation in activities of pupil. |
| 6. Financial liability of sponsor. | 6. Lack of systematic evaluation. |
| | 7. Overemphasis on awards. |
| | 8. Overcoming the redtape necessary to organize activities. |

### *Intramural Activities*

| | |
|---|---|
| 1. Developing and maintaining pupil interest. | 1. Providing adequate supervision. |
| 2. Encouraging wide participation. | 2. Inadequate facilities for play. |
| 3. Developing habits of sportsmanship. | 3. Transportation difficulties. |
| 4. Restrictions of time. | 4. Overemphasis on awards. |
| 5. Dangers of extreme rivalry. | 5. Mechanics of publicity. |
| 6. Teacher threats to individual participants. | 6. Lack of teacher interest. |

### *Interscholastic Athletics*

| | |
|---|---|
| 1. Eligibility of individual members. | 1. School policy on eligibility. |
| 2. Maintaining morale—team, coach, and individual. | 2. Teacher threats to eligibility of athletes. |
| 3. Overcoming efforts of pressure groups—community, parents, principal, staff. | 3. Transportation difficulties. |
| 4. Insufficient funds. | 4. Teachers' objection to emphasis on athletics. |
| | 5. Insufficient funds. |
| | 6. Obtaining adequate custodial help. |
| | 7. Conflicts in scheduling events. |
| | 8. Bad effects of intense interschool rivalry. |

### *Class Organizations*

| | |
|---|---|
| 1. Obtaining wider individual participation. | 1. Obtaining faculty support for class organizations. |
| 2. Dealing with cliques and peer groups. | 2. Dealing with the problems of cost. |

### *Contests and Prizes*

| | |
|---|---|
| 1. Enlisting the interest of pupils. | 1. Avoiding exploitation of pupils by outside organizations. |
| 2. Restrictions of time for conducting and judging individual efforts. | 2. Developing criteria for endorsing a contest. |
| | 3. Overcoming ill effects of intense competition for awards, prizes. |

It may be said that the sponsors are likely to meet more common problems in the internal organization of their activity groups.

2. As external sponsorship problems are more numerous in type, it appears that there is a wider variety of problems involving sponsor-principal or activity-school relationships.

3. Qualitatively, internal and external sponsorship problems seem equally difficult of solution. In general, however, the sponsor can do more about internal problems, and less about many of the external problems. That may be a reason why the sponsors indicate *more* external problems in the inventory.

4. With the exception of major problems in interscholastic athletics (eligibility procedures and practices) and class organizations (political problems relating to cliques and peer groups), a fairly general pattern of sponsors' problems emerges. The major pattern for internal organization, in terms of priority, appears to be:

1. Developing and maintaining pupil interest and participation.
2. Overcoming restrictions imposed by daily schedule, time limits of meetings and practices, facilities, and equipment.
3. Financial liability of sponsor.

In external organization, this pattern of problems is indicated:

1. Lack of interest, support, and understanding by other teachers of the faculty, and by administration.
2. Difficulties regarding pupil transportation to events, and to and from school.
3. Insufficient funds, high costs, and teacher-school liability.
4. Standards, policy, and interpretation of eligibility of pupils for teams and activity groups.

The purpose of this article is to report the frequency and distribution of problems facing activity sponsors in certain California high schools. In most respects it is quantitative. Many additional questions would have to be asked and answered to present a full and desirable account of the nature of sponsor problems. For example, most of the sponsors in this group of 44 reported that activities were scheduled before or after school or during noon hour. Therefore, one may rightfully ask, how does teacher work-load affect problems of sponsors? How does the activity period type of organization affect them? How do teacher-administrator relationships relate to them?

The idea occurs to us that maybe a high-school principal and staff could well undertake a poll of sponsors' opinions as to the pressing problems which they face. Better still, if such procedure were followed annually, it might be possible for a school staff to discover what headway it was making toward solution of the problems and what trends were developing.

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## CALIFORNIA TEACHERS HOLD FAVORED POSITION

The constant threat of being sued hangs over the heads of teachers in all but four states. Only in California, Connecticut, New Jersey, and New York can a teacher count on the school district assuming the cost of his defense in court and the payment of damages should he be sued for injuries that occurred to a pupil while in his classroom, according to E. W. Tischendorf, head of the industrial arts department at Kent State University (Ohio). He continues:

"Teachers should be immune from liability for accidental injury to pupils under their direct supervision. They should, at least, be as immune from dangers and costs growing out of an accidental injury to a pupil as the owner of an automobile or the owner of a home who has his property insured against damages by fire or wind."

—Education Summary,
November 20, 1952

# Recreational Mathematics Materials in the Classroom

By LOUIS GRANT BRANDES

**• In December 1951, a review of a booklet by Mr. Brandes *Math. Can Be Fun* appeared in the *Journal*. The author offered one hundred copies to those who were interested enough to write for them. Mr. Brandes addressed a questionnaire to those who received the booklets to determine the use made of them and presents the interesting results in this article.**

**Mr. Brandes is Vice-Principal, Encinal High School, Alameda, California. He is a frequent contributor to the *Journal*. He has taught in the elementary and the secondary schools of Alameda, and was for one year an instructor at Washington College in Tennessee. He received the degree of M.A. from the University of California in 1949.**

The value of recreational mathematics has long been recognized by the mathematics teachers. The variety and inherent interest in mathematical thinking and manipulation are utilized to improve pupil attitudes and to make learning more effective. Some teachers have found mathematical puzzles a useful device in overcoming emotional blocks to learning. The pupil who has an interest in the recreational side of mathematics has acquired a permanent source of enjoyment. The teacher who has materials available in this area has resources for making classwork more effective.

"The limiting factor in the classroom use of mathematical recreations has been the difficulty in locating suitable materials. Many teachers have been able to collect a usable supply over a long period, but the prospect is discouraging to the beginning teacher."

These were the words of Dr. Lucien B. Kinney, Stanford University, in his review of the booklet *Math. Can Be Fun*.* The review went on to explain that one hundred copies of the booklet, consisting of a collection of short objective tests, number oddities, tricks, illusions, mathematical facts, and stories of interest to pupils from grades 7 through 12, were available to teachers upon request.

Taking advantage of the opportunity to gain more information concerning the use made by teachers of recreational math. materials, this writer mailed a questionnaire to 50 persons selected at random from the first 100 persons who requested and received copies of *Math. Can Be Fun*. The questionnaire was directed toward determining the increase in the use of recreational math. materials made by teachers when such materials were available to them. The questionnaire also sought to ascertain the effect upon pupil interest in mathematics classes where such materials were used, the ways in which the materials were used in teaching pupils, the grade level and type of classes in which the materials were used, and teacher reaction and opinion concerning their use. The questionnaire was forwarded late in the spring semester after most of the teachers had used the booklet *Math. Can Be Fun* since the beginning of the semester.

Of the 50 copies of the questionnaire forwarded, 42 were returned; of these, 32 were from within the state of California, while one each was received from ten different states. Thirty-one of the returns were from teachers of secondary-school grades; eleven returns were from persons other than teachers in the secondary schools. Of the 31 returns from secondary-school teachers, 28 were from teachers in the

* L. B. Kinney, "Book Reviews," *California Journal of Secondary Education*, Vol. 26, No. 8, December 1951, pp. 502–3.

public schools, while 3 were from teachers in private and parochial schools. Persons other than public secondary-school teachers returning copies of the questionnaire included 2 principals, 1 assistant principal, 4 school librarians, 2 college professors, and 2 college students.

To observe the effect of placing selected recreational math. materials in the hands of teachers, the teachers were asked, "Have you used recreational math. materials in your classes prior to receiving the recreational math. materials that you requested?" Of the 31 responding teachers, 3 replied that they had never used such materials before; 24 replied that they had used them occasionally; 2 reported that they had used them quite frequently; while 3 indicated that they had used them often. When asked, "Did you use recreational math. materials in your classes after receiving the selected recreational materials that you requested?" one replied that he had never used such materials; 17 indicated that they had used such materials occasionally; 5 replied that they used them quite frequently; and 8 indicated that they used such materials often. Thirteen of the responding teachers indicated an increased use of recreational material in the classroom after receiving copies of *Math. Can Be Fun.*

Twenty-nine of the 31 responding teachers considered that the use of recreational math. materials in the teaching of their math. classes had improved their classes. Most of the responding teachers felt that the recreational math. materials stimulated the interest of most of the pupils in their classes; some of the teachers expressed the opinion that the materials stimulated, either directly or indirectly, the interest of the entire class.

Attempt was made through questionnaire items to determine in which grades and subjects (of the grades and subjects taught by responding teachers) recreational math. materials were most frequently presented. According to the responses to these items by the 31 responding teachers, recreational math. materials were offered in the math. subjects for all secondary grades, 7 through 14, but were offered by the highest proportion of teachers in the ninth and tenth grade math. subjects. These subjects included, in order of frequency of response, general mathematics, elementary algebra, and plane geometry. The responses indicated that a smaller portion of the teachers presented recreational math. materials in the subjects of advanced algebra, solid geometry, and trigonometry; these subjects appeared to receive the more formal teaching. Responses to further inquiry indicated that recreational math. materials were frequently used in math. classes for remedial, mentally handicapped, and gifted children as well as in the math. classes for regular pupils.

Asked, "How do you use recreational math. materials in teaching your classes?" 29 of the 31 responding teachers replied. In order of the frequency of mention, the following ways of using recreational math. materials were offered:

1. Materials presented to the entire class as a part of a daily lesson plan.

2. Materials presented in class to individuals and small groups to stimulate interest in mathematics.

3. Materials presented to individual pupils in class who have completed their lesson assignments.

4. Materials presented to an entire class to work on outside of regular class time, such as in study hall or at home.

5. Materials placed on chalk board, before classes assemble, to gain the attention of pupils and "settle" the classes.

6. Materials presented to individual pupils, who have expressed an interest in recreational mathematics, to work on outside of regular class time.

7. Materials placed on a bulletin

board in the classroom and changed at regular intervals.

8. Materials presented during "fill in" time, usually at the end of a period.

9. Materials presented to classes on "special" days, such as the days before school holidays, visiting days, etc.

Other ways in which teachers reported using recreational math. materials include presentations for recreational and group meetings, items for school paper, school bulletin boards to stimulate interest of pupils not enrolled in math. classes, materials for math. club activities, and materials for rainy day sessions.

Another of the questions asked the teachers was, "Do you have any evidence to support the opinion that classwork was or was not improved through the use of recreational mathematics in your classes?" Ten of the responding teachers replied yes, 22 replied no, while 3 did not reply to this item. Representative of the evidence presented by the 10 teachers replying yes are the following excerpts:

"The pupils began to organize the fundamentals of mathematics and to show that simple concepts are transferable to the field as a whole. It seemed an excellent link between numbers and literal problems."

"Stimulation of interest resulted in pupil improvement in handing in their assignments on time."

"Pupil interest stimulated through recreational mathematics led to the development of projects that involved comprehensive study."

"Among other things, recreational mathematics tends to stimulate competition among the better pupils. They will work hard to outdo each other to get the solution first. Also, there is a noticeable effort on the part of the pupils to find such material in outside sources to bring to class to 'stump' others."

"This type of mathematics has been a stimulation to many pupils. When they saw how some of the 'trick' problems could be solved by algebra, for instance, they applied such methods to other problems."

"Pupils began to see in their own way a unifying thread running through the subjects; they became conscious of many uses of mathematics not otherwise noticed by many of them."

"Through presenting recreational problems in connection with specific skill to be developed, even the poorest pupils tried all the homework problems and often brought new problems to class."

"There was an obvious change in attitude of the pupils toward mathematics; from work to fun."

The teachers were asked to give their reactions and to make comments concerning their experiences with recreational math. materials in the teaching of math. subjects in the secondary-school grades. Twenty-six of the 31 teachers returning the questionnaire responded to this item. The following excerpts from their remarks express the "feelings" indicated by the responding teachers:

"It is a great aid in exciting and maintaining interest in courses of mathematics."

"Recreational math. items tend to throw more life and informality into what might otherwise become a formal and drab subject. All of my pupils 'go for it.'"

"I used recreational math. items with my classes for the first time this year; I intend to use them next year even more than I did this."

"They offer a welcome break in class routine, both for the pupils and the teacher."

"This material is invaluable in providing a 'starting point' for recitation in math. classes."

"I feel that it has resulted in many of my pupils applying themselves to a better study of basic mathematics."

"I have found that children carry the interest home that was stimulated by recreational math. in the classroom; they frequently bring similar material into the classroom from their homes. I feel this is an excellent public relations medium for our school."

"It helps to let pupils know that a mathematics teacher is a human, normal individual."

"Teaching is many times best accomplished by finding things to do that are fun and incorporating these activities into materials to be mastered. Recreational mathematics is such a medium."

"I feel that recreational mathematics is a device that offers teachers, especially beginning teachers, an excellent opportunity to establish the security of acceptance with their classes."

"Making mathematics a pleasure for pupils is not a crime, but in my opinion a goal."

"I believe that recreational math. materials stimulate interest and lend a note of encouragement to pupils who dislike dull periods. They are especially helpful with slow groups."

Most of the persons, other than teachers, requesting and receiving the recreational math. materials, indicated that they were put into the hands of regular teachers or student teachers with the suggestion that they be utilized for supplementary classroom material, material for mathematics clubs, and material for teacher workshops. Opinion was expressed that these materials were most useful on the senior-high-school level and of greatest value to teachers as an aid in establishing good pupil-teacher relations in the classroom.

Many of the persons responding to the questionnaire sent recreational math. materials that they found useful in conducting their own math. classes. These materials included puzzles, games, devices, suggested projects, number oddities, fallacies, stories, problems, books, pamphlets, and bibliographies. A bibliography of selected references, compiled from the material sent to the writer, is included with this article.

The findings of the questionnaire study on the use of recreational math. materials by mathematics teachers in the secondary schools are summarized as follows:

1. Many teachers in the secondary schools who are not now making use of recreational math. materials in their classes would likely make use of such materials once they were introduced to them and were assured a supply of the materials.

2. Recreational math. materials are being used by mathematics teachers in the secondary schools in many different ways; including the materials as a part of the regular lesson plan is the way preferred by the greatest number of teachers responding to the questionnaire used in this study.

3. Most of the teachers responding to the questionnaire felt that the use of recreational math. materials improved their classes and resulted in stimulating interest for mathematics in most of their pupils.

4. Responses to the questionnaire indicated that recreational math. materials were most useful in the ninth- and tenth-grade subjects, including general mathematics, elementary algebra, and plane geometry; such materials were also useful in teaching "special" classes.

5. There is evidence that recreational math. materials used in the classroom result in improved pupil attitudes and make learning more effective for pupils in secondary-school mathematics classes, though such evidence is subjective.

6. Most of the teachers who responded to the questionnaire had tried recreational math. materials in their classrooms for a semester or more and were convinced of the usefulness of such materials in improving pupil attitudes and making learning more effective.

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## PETER SPENCER RE-ELECTED PRESIDENT OF CALIFORNIA COUNCIL ON TEACHER EDUCATION

Dr. Peter L. Spencer, professor of education at Claremont Graduate School, has been elected to his second consecutive term as president of the California Council on Teacher Education.

Director of the Claremont summer session reading conference, Dr. Spencer is the editor of the Claremont College reading conference textbook series. He is also director of the curriculum laboratory.

Dr. Spencer attended Humboldt State College, the University of Oregon, and Stanford, where he headed Phi Beta Kappa.

A specialist in elementary education for the Bureau of Education in the Philippine Islands from 1929–31, Professor Spencer held visiting professorships at Northwestern University, the University of Illinois, the University of California at Los Angeles, and the University of Washington before coming to Claremont in 1931.

He was co-author of *Building Mathematical Concepts in Elementary School,* and "Geography Tests," and developed the Spencer "Diagnostic Arithmetic Tests."

## FOURTH REGIONAL CONFERENCE ON CONSERVATION OF NATURAL RESOURCES

Dr. Roy E. Simpson, Director, State Department of Education, has issued invitations to attend the Fourth Regional Conference on Conservation of Natural Resources to be held at Fresno State College in Fresno, February 5–7, 1953. This conference, the last of a series initiated in 1950 by the Department of Natural Resources and Education, is jointly sponsored by the State Department of Education, Natural Resources, Fish and Game, and Fresno State College.

The theme of this regional meeting is "Water—Life Blood of the San Joaquin Valley." The counties to be served and invited to this affair include the following:

| | | |
|---|---|---|
| Alpine | Kings | San Joaquin |
| Amador | Madera | Stanislaus |
| Calaveras | Mariposa | Tulare |
| Fresno | Merced | Tuolumne |
| Kern | San Benito | |

The purpose of the conference is to convene representatives of industry, agriculture, commerce, labor, education, civic groups, conservation organizations, the press, and government from the above listed counties, to develop an awareness of regional conservation problems, and a willingness to work for wise use of our natural resources.

The conference will begin on Thursday evening, February 5, with a general session. Mr. Bert Smith, Executive Secretary, Water Economics Committee, Irrigation Districts Association of California, will be the main speaker. In addition, there will be a showing of the Walt Disney production entitled *Nature's Half Acre*. Following this, the National Association for Conservation Education and Publicity will present a representative of the Disney Studios with a national award for the greatest contribution in 1951 to conservation education through the media of the motion picture.

The Friday program will include four section meetings in the morning, and four in the afternoon on topics in keeping with the central conference theme. The topics are:

Water for Our Growing Population
Water for Our Changing Agriculture
Water Supply and the Forest
Water for Wild Life
Water for Industry
Water for Recreation
Water for Livestock
Water for Power

Through the splendid co-operation of the College officials, their facilities have been made available to serve the Friday noon luncheon and evening dinner. The dinner is being sponsored by the California Conservation Council under the direction of Miss Pearl Chase.

The evening general session will consist of a summary panel. The summation speaker will be Mr. Stuart Ward, Executive Secretary, The Commonwealth Club, San Francisco. A new motion picture on rain making will be shown.

The final general session on Saturday morning, February 7, will be devoted to the consideration of the educational implications of conservation. Negotiations are under way to secure the services of Dr. E. Laurence Palmer, Professor Emeritus of Rural Education at Cornell University, as the principal speaker, and leader of a panel composed of regional educators, for this final session. A new motion picture on teacher training in conservation will be previewed and discussed.

# Guidance Is a Co-operative Project

By ARTHUR L. TRAPHAGEN

**• The counselor and the teacher must work harmoniously together if the best interests of the pupils are to be served. That they do not always do so is suggested by Mr. Traphagen who outlines some of the reasons for the difficulty. The source of his data is a recent teachers' institute in which he participated in discussions about guidance and counseling with teachers who were unaware that he was a counselor.**

**Mr. Traphagen speaks with the authority both of teacher and counselor as he occupied these positions in Lassen Union High School, Susanville, California. This was his first teaching responsibility in high school. He served from 1947 to 1951 as a counselor on the staff of the University of California Counseling Center, Berkeley, California, a position he now again holds.**

Much that is written about guidance is unfortunately read only by counselors. The material deals mainly with the philosophy of guidance, directive versus nondirective techniques, testing programs and test interpretations, choosing a vocation, and the problem as to whether guidance should be the responsibility of the classroom teacher or of a professional counselor. There is a sufficient quantity of this type of writing to make all but the hardy feel that guidance is a one-sided affair appropriated by and reserved for the person in the school holding that title. Too frequently it is found that in school systems where a formalized guidance program exists the teachers tend to exclude themselves from the program. This is no more desirable than to have the counselor excluded from the classroom.

After voluntarily removing themselves from the picture the teachers begin to cry exclusion. Whenever the teacher feels that he is deliberately given the misfits in the school, he forgets the sigh of relief which he gave when he relinquished program planning.

Counseling is ridiculed or ignored by many, within and without the teaching profession, because it is not understood. The counselor all too frequently finds himself in the proverbial position of being between the devil and the deep blue sea. The student wants him to get him out of jams, to let him be the exception to the rule and be excused from some of the school's requirements, to extricate him from courses in which he is failing, not from lack of ability but from lack of application, to persuade a teacher into letting him into a class for which he is not qualified, to get teachers to release him from homework, and so forth. Parents make similar requests. Even after conferring with teachers and counselors concerning academic and nonacademic problems where an agreement has been reached by parent, child, teacher, and counselor, parents will at times request that the agreement be nullified if the child finds it difficult to comply. Many children can talk parents into and out of anything and parent and child feel that they should be able to do the same with the school. Even teachers exhibit such reaction at times. They wish certain pupils removed from their class or that certain pupils or levels of ability be not assigned them when schedules are made. They would like their particular class to be as homogeneous as possible and at the upper level of ability. They sometimes forget the philosophy of American education and the purpose of the curriculum organized by their school. That is: (1) The school is to provide education to all persons according to their abilities, interests, and aptitudes and to develop a basis for further development. (2) The school is for the student and the staff is to help him in his development. He is the focus

of the school and the faculty is a part of the school as is the plant.

The teacher must realize that no matter how qualified the counselor may be he cannot be omniscient. He cannot reach unaided the goal of counseling which is to help each child adjust to life, to the present as well as to the future, according to his interests and abilities, which adjustment includes the vocational, avocational, and social areas. The teacher works with the child both as an individual and as a member of a group. If he does not take his teaching subject too seriously, he can do much to assist the child with his adjustment. Many situations and "problems" need only adult common sense for their solution. For others the teacher may confer with the counselor or suggest to the child that he talk the problem over with the counselor. This means neither doing the counselor's job nor doing his "dirty work." It means having an interest in his pupils.

This co-operation is needed from all teachers but especially in the area of industrial arts and vocational arts because the teachers of these subjects should know more about them than does the counselor. Industrial arts is a fitting place for the teacher and counselor through their *combined* training and experience to determine the aptitude, interest, and special abilities of boys and girls for further nurture and direction into specific occupations. The effort of both is needed to obtain an accurate appraisal of interests, attitudes, ideals, intelligence, special desires, abilities, and skills. When the final placement or direction is decided upon, it must be realized that a student is not placed in an academic program because he is devoid of social or mechanical ability but because he has a higher degree of abstract ability. Conversely, a student is not encouraged into a nonacademic program because he is lacking in abstract intelligence but because he has higher mechanical ability. Some students belong to neither group and will become the stock clerks, assemblers, and general workers that are needed to carry on the work of the world.

Teachers should not expect each student to be proficient or to become a craftsman in the teacher's field. Only a small minority will. Most teachers expect too much rather than too little from the students and expect them to share the teacher's intense inerest in his subject. Teachers often try to develop perfectionists, forgetting the purpose or function of the course they teach. Students elect and are encouraged to take various courses for various reasons. English is encouraged so that they can read for pleasure and information and express themselves without embarrassment. History is encouraged so as to understand society and some of the ways of the world. Mathematics is encouraged to enable them at least to do basic calculations in their dealings with the business world. Art and music are encouraged as avenues of self-expression, for their socializing value, and the enjoyment that comes from an awareness of beauty. There is always the possibility of their developing into a satisfying hobby or avocation. Industrial arts, which term includes agriculture, commerce and business, homemaking, and shop practices, on a nonvocational level, is a part of general education. These courses are encouraged for the following reasons:

1. To develop basic skills useful in any vocation or in the home.
2. To develop an appreciation for good workmanship and design.
3. To develop a sense of pride in the ability to work with one's hands.
4. To learn how to care for tools and materials.
5. To develop self-discipline which requires one to do a task at the time it should be done.
6. To develop the habit of orderly procedure in the performance of a task.

The teachers of these arts should feel satisfied if only some of these objectives are achieved and if each student develops a recreational activity based upon one of these arts. These courses should exclude neither boys nor girls. Girls should be encouraged to take courses involving the handling of tools while the boys should be encouraged to take basic or orientation courses in homemaking. These courses are necessary for well-rounded experience and future living.

Guidance is a co-operative process as is education, and the best that can be done must be done with each student; neither the brilliant nor the deficient must be neglected. If you aim to make a craftsman out of each of your students, you are doomed to failure before you begin and are yourself misplaced by being in secondary education.

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## INADEQUATE FACILITIES FOR TEACHING BIOLOGY

Even in this age of science, a surprising number of secondary schools lack adequate facilities for experimental and supplemental work in biology, reports *The Teaching of General Biology* (Bulletin 1952, No. 9, U.S. Office of Education). Out of a sample of 786 public secondary schools replying to a questionnaire, 95.1 percent offer general biology. But: 2.3 percent offer no laboratory work of any kind; 9 percent have no compound microscopes; 7 percent do not have even hand lenses; 38 percent have no biology field trips (twice as many large as small schools lacked them); 41.5 percent devote less than a fifth of class time to laboratory work; 13.3 percent have no scientific magazines; 8 percent have no supplementary biology reading. Further, 10 percent of the teachers of general biology lack even a minor in biology.

—Education Summary,
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